



THE ARISAKA RIFLE

BILL HARRIMAN





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INTRODUCTION

When I started to write this book, I was immediately struck by the scarcity of surviving Arisaka rifle material. Specimens are rare in Europe, most being located in the United States where World War II servicemen returned with them as trophies of war. Original ammunition is also rare, being confined to the collections of specialist ammunition collectors. If Arisaka rifles and their ammunition are rare, however, then their ancillaries such as pouches and cleaning equipment are almost non-existent. Those original specimens that do exist command high prices, taking them beyond the means of most collectors. This lack of original items has presented its own problems during the research and illustration phases of this book. However, I believe I have overcome these problems by the judicious use of good-quality replicas.

I first owned an Arisaka rifle in the 1980s. It was a Type 38 that had been smooth-bored to evade part of the UK's ridiculous (and largely ineffective) firearms legislation. I marvelled at the way the Japanese had applied their talent for innovation to what was essentially just a Mauser Gewehr 98 bolt-action rifle. This spirit of innovation was counterbalanced by the fact that the Type 38 was not innovative in and of itself, being a typical infantry rifle of its time as it was long and very clumsy, especially when its sword-bayonet was fixed. I think it was this paradox of modernity coupled with endemic military conservatism that attracted me to becoming interested in the Arisaka and to acquire further specimens for my collection.

The acquisition of such specimens has proved difficult, few appearing on the UK/European market at any one time. The situation is better in the United States, where Arisaka rifles seem more plentiful due to the greater number brought back by servicemen. However, in either case, I have never seen a large number of Arisakas come onto the market in one lot. This is because the Arisaka never survived in large-enough numbers to become war surplus. Most were destroyed after Japan's surrender in 1945. Some

OPPOSITE

A posed photograph of a Japanese naval landing party in Shanghai, 1937. The troops are armed with typical section-level weapons of the time, including Type 38 rifles fitted with Type 30 bayonets, a Type 11 light machine gun and a Type 89 grenade discharger, the so-called 'knee mortar'. (AirSeaLand Photos)





The 6.5mm Type 30 Arisaka rifle replaced the older Murata small arms carried by Japanese forces, but the older rifles continued in service for several years after the introduction of the Type 30 rifle in 1897. Here, three Japanese infantrymen, photographed during the Boxer Rebellion of 1899–1901, are armed with Type 22 Murata rifles and bayonets. They are wearing M1886 wool winter uniforms and full service marching order equipment. (AirSeaLand Photos)

were stockpiled and issued to friendly powers for use in post-war conflicts such as Korea, only to be destroyed as those powers later re-armed with modern rifle technology. Despite some 6.4 million Arisakas being manufactured, it is a relatively rare rifle on the collector market today.

Although the Arisaka rifle, its ammunition and ancillaries are rarely encountered today, the written record of their use in contemporary Japanese sources appears to be non-existent. Extensive research failed to reveal any accounts of the Arisaka's use by the men who were issued with it. Actually, that is easily explained. After its surrender in August 1945, Japan became totally demilitarized, both as a political state and as a civil society. In that atmosphere, there would have been no market for the memoirs of a Japanese serviceman had he been inclined to write them



down. In any case, no former Japanese military man would have wanted to draw attention to himself in a political environment that totally eschewed warfare. It is also likely that any former serviceman would have feared retribution at the hands of the occupying forces.

One aspect of the Arisaka's use struck me as being immediately ironic. During World War I, Japan's contribution to the Allies was largely naval, with very little land engagement. However, Japan's service rifle was used to train British recruits and to arm the Royal Marines and sailors of the Royal Navy. It was also provided in huge numbers to arm Russian troops due to the loss of indigenous Mosin-Nagant rifles in one disastrous engagement after another. Yet barely a decade earlier, Russia and Japan had been at war with one another. In another bizarre twist, after Britain packed off her redundant Arisakas to Russia in 1915, nobody could have reasonably foreseen that British servicemen would be facing similar rifles in the Far East during 1941–45.

A word about the Imperial Japanese chrysanthemum crest or *mon* (often referred to incorrectly as a 'mum' by some collectors). I do not subscribe to the notion that the *mon* was deliberately ground off the receivers of captured Arisaka rifles either by surrendering Japanese troops (they would have had more pressing matters of concern with which to occupy themselves) or by order of the Allies as a way to humiliate the Japanese. The latter is implausible, given General Douglas MacArthur's courteous treatment of Emperor Hirohito and the Japanese royal family. Furthermore, the Japanese ordnance already had a recognized way of cancelling the *mon* by over-stamping, so it seems unlikely that it would be further defaced by grinding. In my opinion, those rifles with crudely ground-off *mons* will have been so modified by new end-users of captured arms who wished to disassociate themselves from Japan's imperial past or at unit level on an ad hoc basis.

A view of the breech area of a Type 44 Arisaka carbine, showing the Kanji characters for '44 Type', gas-escape holes, Imperial chrysanthemum *mon*, reduced-size rear sight and side sling-swivel. (Chantel Taylor)



A view of the author's Type 99 Arisaka rifle, with muzzle cover fitted. (Chantel Taylor)

THE JAPANESE DATING SYSTEM

In order to discover the date when any particular Japanese military small arm was adopted, it is vital to understand the Japanese dating system, which is totally different from that which prevailed in Europe. Most European military weapons have a simple year designation, normally preceded by the words 'Model' or 'Pattern'. Not so in Japan; there the system depended on either the year in which the Emperor's reign began or the last two digits of the Japanese calendar.

Thus, in the era of the reign of the Emperor Mutsuhito (1867–1912), who took the reign name *Meiji* (Enlightened Rule), the designation 'Type 13' was used for the Murata rifle adopted in 1880. Subsequently, the Type 18 Murata (1885), Type 22 Murata

(1889), Type 30 Arisaka (1897), Type 35 Arisaka (1902), Type 38 Arisaka (1905) and Type 44 Arisaka (1911) entered service during this reign. The same system prevailed in the reign of Yoshihito (1912–26), who was known as *Taishō* (Great Correctness). No new rifles were adopted during this reign.

Thereafter, the system changed. In the reign of Hirohito (1926–89), known as *Showa* (Radiant Peace), the last two digits of the Japanese calendar were used. This is predicated upon the Japanese Empire beginning in 660 BC; consequently, the Type 99 Arisaka rifle was adopted in 2599 or the Western year, 1939, while the Type 2 paratrooper rifle was adopted in 1942.

Owning an Arisaka rifle is like shaking hands with history. Taking one to a shooting club or range excites immediate interest from fellow shooters. When I acquired a Type 99 Arisaka rifle for my collection, I did so largely for the sake of completeness. It was only looking at it in detail, handling and firing it, that made me want to know more about this remarkable rifle. On that basis, it is only fit and proper that the rifle used by Japan to conquer most of the Far East in World War II should have its story told in a readily accessible form. Writing this book has been an enjoyable experience that has replaced the turgidity of received wisdom with the heady sensation of personal discovery. As I worked on the material I was educated, informed and entertained; I hope that in reading it, you will be too.

LEFT

Japanese soldiers in China in the late 1930s receive a cup of sake prior to a ceremonial toast. The bayonet bars and cleaning rods of their Type 38 rifles are clearly depicted. Some of the soldiers wear a white armband adorned with *Kanji* characters; this was often associated with the Kenpeitai, the infamous military police. (AirSeaLand Photos)





DEVELOPMENT

A modern Japanese firearm

FIREARMS IN JAPAN 1543–1870

It is impossible to understand the development of military firearms in Japan during the last three decades of the 19th century without first understanding the way in which firearms were assimilated and developed in Japan during the preceding three centuries. This differed from the European experience which was a process of gradual evolution within that continent, once guns and gunpowder had been introduced from China and the Islamic world. Instead, Japan was exposed to practical, hand-held firearms on an ad hoc basis when they were brought into the country by Westerners. This introduction of Western hand-held firearms influenced the use and development of firearms within Japan for more than three centuries.

In the first instance, Japan received its first firearms via its neighbour China, probably during the 13th century. These firearms were very primitive hand cannon that were not very much used. Certainly, their introduction did not start a process of evolution and it seems that they were regarded as mere novelties by the Japanese who did not deploy them for military purposes, preferring to rely on the sword, bow and polearm.

Then, in 1543 a Chinese merchant ship was forced into the port of Tanegashima by bad weather. On board were Portuguese merchant-adventurers, two of whom had matchlock arquebuses. These were most likely made by the Portuguese arsenal at Macao and probably had crude snapping-type locks. The local feudal lord, Tanegashima Tokitaka, saw the matchlock arquebuses and asked to be instructed in their use. Eventually, he bought them both and instructed his swordsmith to make copies. Consequently, the matchlock arquebus became established as a military weapon in Japan.

This weapon became known as the *tanegashima teppo*, from the Japanese word for iron cannon. While they were made in a variety of sizes, the military examples had relatively small bores. Their barrels had stepped muzzles and quite sophisticated rear sights, while their stocks had short pistol-grip-style butts and were often pierced with holes through which the match was threaded when in use. Their brass locks featured forward-snapping serpentines or match holders, powered by brass coil springs. At some stage a lacquered lock cover was devised, which allowed such weapons to be used in the rain. Their use was confined to the lower-class soldiers or *ashigaru*. Guns did not feature in the Samurai code of conduct and honour known as *Bushidō*.

At the time the matchlock arquebus came into Japan, the country was in turmoil, as warring feudal lords vied with one another for supremacy. Many saw its potential to give them a tactical advantage over rival factions. Lord Oda Nobunaga ordered 500 examples, but even though this was a large order at the time, it would have still only armed a small proportion of the troops in his army. In 1567 the powerful *daimyō* Takeda Shingen directed his followers to reduce the number of spears in their possession and to equip their foremost men with guns (Perrin 1988: 35). This command was eerily prophetic as Takeda is believed to have died as a result of a bullet wound in 1573.

The battle of Nagashino in 1575 was won by massed arquebusiers whose concentrated fire negated the tactical advantage of the powerful enemy cavalry. At the battle of Sekigahara in 1600, use of the matchlock arquebus proved so decisive that this engagement precipitated the eventual supremacy of the Tokugawa Shogunate (1603–1867) and a politically unified Japan. On both occasions, the arquebusiers were protected by shields or fences. They used their guns to fire close-quarter volleys, effectively destroying their enemies who were expecting the customary close-combat *mêlée* between individuals.

The supremacy of the Tokugawa Shogunate effectively caused firearms development to stagnate in Japan. In any case, as the country's borders were sealed there was no opportunity for foreign firearms developments to be incorporated. The existing matchlock arquebuses had proved effective so there was no incentive to improve or develop them. They would remain the archetypal Japanese firearms for at least the next 270 years.

The European parentage of this 11mm Type 18 Murata rifle is readily apparent. The screw in the end of the bolt knob gives access to the 'V'-shaped striker spring. (© Royal Armouries PR.6335)





Japanese infantrymen pictured during the Boxer Rebellion. They carry the Type 22 Murata rifle, which was simply a Japanese adaptation of the Austro-Hungarian Kropatschek design of 1880. The Type 22 rifle had a tubular magazine in the forend; but while this magazine held eight cartridges, it took a long time to reload. The soldiers wear the M1886 wool winter uniform with their greatcoats carried *en banderole*. (AirSeaLand Photos)

EARLY JAPANESE MILITARY SMALL ARMS

After Japan's self-imposed isolation began to break down from the 1850s onwards, the Japanese became exposed to much more Western firearms technology. In order to strengthen itself against internal rebellion, the Shogunate imported smooth-bore muskets from the Dutch; these were probably Dutch Model 1817 or similar obsolete types. A contemporary drawing shows Shogunate troops wearing Western-style uniforms and armed with European muskets with fixed bayonets, marching against the Mito rebels in 1864.

After the resignation of the Shōgun and the Imperial Restoration early in 1868, this Westernization of Japan intensified. The Emperor Mutsuhito realized that, as part of this process, the Japanese military needed to be remodelled in the Western style. Pending the establishment of large-scale domestic small-arms production, Japan imported a variety of European military small arms. These included Enfield Pattern 1856 short rifles from Britain, Albini rifles from Belgium, Dreyse needle-rifles from Prussia, Martini-Henry rifles from Britain and Winchester rifles from the United States. Bayonets for the French M1866 Chassepot needle-rifle are known, marked with Japanese characters. It is believed that these French rifles were procured in small numbers for the Japanese Imperial Guard.





The 8mm Type 22 Murata repeating rifle. The bayonet ring goes over the extended magazine cap at the muzzle. The lever to the left of the bolt is the magazine cut-off. (© Royal Armouries PR.6337)

In 1870, Japan's first major government arsenal was established at Koishikawa, near Tokyo. (The fabric had existed for several years earlier, but had been under the control of various factions prior to the establishment of stable, imperial rule.) Henceforth, Japan would no longer import a diverse range of European small arms, but would produce its own domestically inspired ones.

The Koishikawa Artillery Arsenal had its origins in a gun-casting shop established by the Tokugawa Shogun in 1864. After its operation was taken over by the Meiji government in 1870, its initial focus was on the repair of imported European small arms such as French Minié rifles and Dutch muskets, many of which had been confiscated from warring feudal lords. The facility also made copies of the British Enfield Pattern 1853 rifle-musket which were later converted to breech-loaders using the Snider patent breech.

Japan's first domestically designed and produced military rifle was the Type 13 Murata, a single-shot rifle introduced in 1880 and chambering 11×60mmR ammunition. Designed by Major Murata Tsuneyoshi, this was a curious hybrid of the Dutch M1871 Beaumont, French Gras M1874 and German Mauser M1871 actions. The Type 13's most unusual feature – copied directly from the Beaumont – was that its striker was powered by a 'V'-shaped rather than a coil spring, housed within the hollow, bulbous bolt handle. This mélange of design features was unsurprising given Murata's background. A veteran of the Boshin War (1868–69) and the Takamori Saigō Revolt of 1877, he had also travelled extensively in Europe to study small-arms design. In 1885, the improved 11mm Type 18 single-shot rifle and cavalry rifle were developed.

In 1889, Japan adopted its first small-bore (8mm) magazine-fed rifle, the 8mm Type 22 Murata repeating rifle. This was no more than a Japanese version of the Austro-Hungarian Kropatschek rifle design. Its tubular magazine held eight cartridges, each loaded with a compressed pellet of black powder – later on, smokeless powders were used. In order to prevent chain-reaction detonations in the magazine, the cartridge's primer had a small shield which prevented the bullet from the cartridge behind it from making contact with it. (Eventually, the 8×53mmR Murata cartridge would become the 8×50mmR Siamese Model Mauser cartridge



Two Japanese cavalrymen during the Boxer Rebellion. They are armed with the M1886 sabre and the Type 22 Murata cavalry carbine. This was simply a shorter version of the Type 22 infantry rifle and featured a five-shot magazine. A special cavalry ammunition pouch is worn slung over the left shoulder; this had a greater capacity than the standard infantry ammunition pouch. (AirSeaLand Photos)

for the Type 45 rifle which was also made by Japan.) The Type 22 Murata was also made as a cavalry carbine with a shortened barrel and a five-shot magazine. The cavalry carbine had no provision for a bayonet as the tactical doctrine of the time required the cavalry to engage with lance or sabre; firearms were issued for defensive purposes only.

JAPAN MOVES TO 6.5mm CALIBRE

During the last decades of the 19th century, there was an ongoing debate among the world's military as to what bullet calibre they should choose for their new military rifles. The French started this debate in 1886 when they adopted an 8mm-diameter bullet for their new rifle, the Lebel. At this time, most military rifles fired bullets of about 11.5mm diameter. The significant reduction in diameter was made possible by the higher velocities generated by smokeless powders. The 8mm-diameter bullet set the mainstream standard and many countries followed the French lead.

Work to develop a replacement for Japan's outdated Type 22 Murata repeating rifle began in 1895. Japan's military leaders were aware of the trend among some European countries to adopt cartridges with small-calibre bullets (6.5mm) which had high velocities. These bullets gave flatter trajectories and only slightly lower kinetic-energy (KE) levels than conventional cartridges with 7–8mm bullets. The smaller-diameter bullets were also thought to be better penetrators of enemy fortifications.

By the time the Japanese military decided that it needed to replace its obsolete 8mm Type 22 Murata rifles, efficient smokeless powders had revolutionized military rifle ballistics. Rifle calibres were reduced drastically and the bullets themselves were of a composite construction and driven at increasingly higher velocities. Interestingly, Britain looked at .256in (6.5mm) ammunition to replace the ageing .303 in the years immediately preceding World War I, but settled on a .276in (7.0mm) cartridge. The latter could very well have become Britain's service-rifle round had World War I not intervened.

COUNTRIES MOVING TO SMALLER RIFLE CALIBRES			
Country	Year of adoption	Calibre	Typical kinetic energy
France	1886	8mm	3,364 joules
Austria-Hungary	1888	8mm	3,037 joules
Britain	1888	.303 (7.7mm)	2,671 joules
Germany	1888	8mm	3,262 joules
Belgium	1889	7.65mm	3,430 joules
Denmark	1889	8mm	2,765 joules
Switzerland	1889	7.5mm	3,444 joules
Turkey	1890	7.65mm	3,430 joules
Russia	1891	7.62mm	3,327 joules
Spain	1891	7.65mm (reducing to 7mm in 1893)	3,430 joules
USA	1892	.30-40 Krag (7.8mm)	3,200 joules

6.5×50mmSR ARISAKA RIFLE AMMUNITION

The cartridge adopted for the Type 30 rifle in 1897 followed the Scandinavian/Italian trend towards 6.5mm. Its copper-jacketed, round-nosed, lead-cored 161-grain (10.43g) bullet was propelled by 32 grains (2.07g) of nitrocellulose powder, giving a velocity of 671m/sec and a kinetic energy (KE) yield at the muzzle of 2,346 joules. The copper jacket caused excessive bore fouling so the material used was changed to cupro-nickel. The base of the semi-rimmed cartridge case was slightly convex and some primers were secured by two stab line crimps. A gallery-practice round with a reduced charge and a round lead bullet was also issued, as was a blank with paper bullets. The blanks tended to be made from fired cases; their bases had small punch marks indicating how many times they had been reloaded. A dummy cartridge for drill purposes had a brass dummy bullet with two deep grooves around it.

During 1902–21, Type 30 ammunition was also loaded in Sweden by the Nordiska Metallaktiebolaget and Karlsborg munitions factories for an unknown client. Similarly, it was loaded by Keller & Co. of Austria, an unknown Czech factory and Selve of Thun in Switzerland. Type 38 cartridges were loaded in Burma during the 1950s for the Rangoon Police.

In 1905, when the Type 30 Arisaka rifle was redesigned, the new Type 38 cartridge was given a 139-grain (9.01g) spitzer-type bullet and a 33-grain (2.14g) powder charge which propelled the

bullet at 762m/sec. This gave a much-improved KE yield of 2,615 joules. From 1941 onwards the cupro-nickel jacket and bullet were replaced by gilding metal equivalents. Late versions of the Type 38 cartridge have light-pink lacquer case-mouth seals and primers secured by three stab line crimps. The Type 38 cartridge also had gallery-practice versions, blanks and dummies with brass, steel and paper bullets.



Six Japanese 6.5mm cartridges: (1) early Type 30 Ball with round-nosed bullet; (2) Kynoch-loaded Type 30 Ball, dated 1916; (3) Type 38 Ball with spitzer bullet; (4) Type 38 Ball with spitzer bullet; (5) Type 38 Tracer with green lacquered neck; (6) Type 38 Ball with rose lacquered neck. (© Royal Armouries XX.3009, XX.3010, XX.3011, XX.3012, XX.3013 & XX.3014)

Another group of countries – albeit not the leading military powers of the day – opted for 6.5mm-calibre bullets. The high ballistic coefficient and sectional density of these smaller bullets offered higher velocities and flatter trajectories. France also trialled significant numbers of the 6.5mm Daudeteau rifle in 1896, but did not adopt it for service, as its ballistics (KE value: 2,606 joules) were inferior to those of the 8mm Lebel cartridge. The average KE value of cartridges in this group of rifles was 2,749 joules, about 14 per cent less than that of the 8mm range.

COUNTRIES ADOPTING 6.5mm CALIBRE		
Country	Year of adoption	Typical kinetic energy
Italy	1891	2,576 joules
Romania	1892	2,840 joules
Norway	1894	2,657 joules
Netherlands	1895	2,840 joules
Sweden	1896	2,657 joules
Japan	1897	2,346 (later 2,615) joules
Portugal	1904	2,960 joules
Greece	1905	2,847 joules



A Type 30 Arisaka rifle. The rifle is ready to fire as the hook-shaped safety catch is not visible. (© Royal Armouries PR.6339)

Japan's choice of the small-calibre, high-velocity 6.5mm bullet conferred a further advantage as Japanese soldiers were smaller in stature and more slightly built than their European counterparts. They benefited from the reduced recoil of the smaller cartridge, especially when fired from the full-length rifle. Muzzle flash was reduced too, safeguarding the firer's location. The smaller calibre also conferred advantages in terms of saving weight and space. Moreover, fewer raw materials were needed to make the cartridges as they were smaller and lighter. Perhaps the main factor in the Japanese choice of a small-calibre cartridge was that it had sufficient KE to cause a battlefield casualty without overkill. During World War I, most European .30-calibre military cartridges proved to be overpowered for the ranges at which typical infantry engagements took place.

THE TYPE 30 ARISAKA RIFLE

Development of a Mauser-style repeating rifle with a box magazine was undertaken at the Koishikawa Arsenal under the supervision of its Superintendent, Colonel Arisaka Nariaki. Arisaka's rifle design was reminiscent of (and probably borrowed from) the German 8mm Model 1888 Mauser Commission bolt-action rifle, the bolt of which operated in a split-breech at the rear of the action. The Type 30 had a hook-type safety catch at the end of the cocking piece and a detachable Mannlicher-type bolt head. The bolt could be dismantled without recourse to tools – an important consideration for daily maintenance by the soldier. However, the facility whereby the detachable bolt head could be lost





tended to negate that aspect of the design. The bolt had a small gas-escape hole which connected to the striker channel to allow the safe dispersion of propellant gases in the event of a ruptured primer.

Arisaka's rifle was fitted with a folding rear sight graduated to 2,000m and its stock was made in two parts, with the bottom section of the butt being dovetailed to fit the upper section. (This method of saving wood by using a smaller stock blank would characterize all Arisaka rifles until the end of their production in 1945.) The two-part stock design conferred another advantage in that the longitudinal splicing of the butt and the parallel grain of the wood to the butt's upper and lower edges resulted in a stronger toe of the butt that was less likely to split off. In addition, the blocks of wood from which the stocks were machined could be narrower, thus saving on natural resources (War Office 1904: 95).

The rifle also had a short top handguard and a brass-tipped cleaning rod; the latter could also be used to remove a stuck cartridge case in an emergency. There was a 'T'-section bar for the bayonet on the underside of the top band. The Mauser-style integral box magazine had a hinged floorplate secured by a small catch in the trigger-guard bow. The magazine was fed by Mauser-type five-round stripper clips that fitted into notches machined into the action.

By February 1898, Arisaka's rifle was fully developed and designated the Type 30 Arisaka infantry rifle (*sanjū-nen-shiki hoheijū*). Production started in October 1898 and a carbine version followed in August 1899. The carbine had a smaller rear sight, shorter barrel and sling-loops mounted on the left side of the stock. Early production examples of the carbine lacked a bayonet bar, reflecting the prevailing military philosophy

A Type 30 Arisaka carbine. Note the absence of a bayonet bar on the forend cap. (© Royal Armouries XII.2338)





A Type 35 Arisaka rifle. The dust cover is in the forward position.
(© Royal Armouries PR.6343)

of the time that the principal role of the cavalry was to engage with its sabres.

Early experience with the Type 30 revealed a tendency for the stock to crack at the wrist. This problem was solved by extending the tangs of the receiver and magazine floorplate. Again, this feature was retained until production of Arisaka rifles ceased in 1945. The rear sight was recalibrated after a new spitzer bullet was introduced soon after the end of the Russo-Japanese War.

Using serial number evidence, it is estimated that over 500,000 Type 30 rifles were produced. The total number of carbines is estimated at 100,000, but some of these may have been reworked rifles. The Type 30 is very seldom encountered on the collector market today.

THE TYPE 35 MARINE OR NAVY RIFLE

After the Imperial Japanese Army (IJA) adopted the Type 30 rifle, the Imperial Japanese Navy (IJN) realized that its Special Landing Forces needed a replacement for their outdated Type 22 Murata rifles. As the Russo-Japanese War had exposed several limitations with the Type 30 rifle, the IJN commissioned a specially improved version from the Tokyo Arsenal. The designer was one Captain Nambu Kijirō, who was to be hugely influential in Japanese small-arms design thereafter.

Captain Nambu's design, designated the Type 35 rifle (*sanjū go nen shiki*), was essentially an improved Type 30 rifle. Many of the improvements were concentrated on the bolt. The cocking piece was enlarged to deflect any gases from ruptured primers away from the firer's face, the bolt-handle knob was enlarged to facilitate closing and the bolt head was simplified. The safety catch remained of the hook type, but its grasping surface was chequered to improve grip. The head and chamber were also modified and the action was fitted with two gas-escape ports in the event of a ruptured primer. All of these improvements were designed to enhance the strength and safety of the rifle. The rear sight was markedly different and appears to have been inspired by that of the Dutch M1895 Mannlicher rifle. The Type 35's rear sight was a tangent type with 'V' aperture and was graduated from 300m to 2,000m. It was protected by two wooden 'walls' which rose from the top of the handguard.



The most striking feature of the Type 35 rifle is its sliding steel dust cover. One of the main problems with the Type 30 rifles during the Russo-Japanese War was the ingress of dust and other contaminants into their actions, resulting in malfunctions. The Type 35's dust cover ran along slightly raised rails on the action siderails. For repeating fire, the dust cover needed to be slid forwards after a small release catch was operated. Two small holes pierced in the dust cover lined up with the gas-release holes in the receiver ring. Unlike later Arisaka dust covers, that of the Type 35 rifle was silent in use – a major advantage for any combat rifle. The dust-cover design does not appear to have been inspired by those of the British Lee-Enfield rifle (attached to the bolt) or the rotating type around the action of some Italian Vetterli rifles. Instead, due to the lack of bolt covers from foreign rifles to study their design and operation, the Type 35 rifle's dust cover seems to have been entirely original design work by Nambu and his team, and which was characterized by a back-and-forth movement on the barrel facilitated by attaching a spring to the dust cover (Honeycutt & Anthony 1996: 34). The same dust cover is used on the 8mm Siamese Model 1903 rifle; this is unsurprising given that these rifles were built at the Tokyo Arsenal.

The Type 35 rifle was rendered obsolete with the adoption of the Type 38 Arisaka rifle in 1907. The Japanese authorities did not destroy the remaining rifles, however, but simply sold them on to foreign buyers. Siam bought a large number. Siamese examples are immediately identifiable because the *chakra*, a six-bladed wheel symbol, can be found stamped on the receiver bridge. Some rifles are likely to have gone to China as conversions to 8mm Mauser are known (this cartridge was very popular in that country). No evidence exists that the Type 35 was ever supplied to Britain during World War I. In all probability they had been sold elsewhere prior to that conflict.

The last manifestation of the Type 35 rifle was during the final months of World War II when some Type 35 actions were combined with training-rifle components in the construction of so-called 'last-ditch' rifles to defend the Japanese homeland. Total production of the Type 35 rifle is estimated at 38,200, making it the rarest of all the production-model Arisaka rifles. Specimens are very rarely encountered on the collector market.



A Type 38 rifle. (© Royal Armouries PR.6342)

THE TYPE 38 RIFLE AND CARBINE

Japan adopted the 6.5mm Type 38 Arisaka bolt-action rifle (*sanjūhachishiki hoheijū*) in May 1906: it was to be the standard Japanese infantry rifle for the next 33 years. The Type 38 was built on a modified Mauser Gewehr 98 action and was fed by five-round chargers (aka stripper clips). Its barrel was 79.4cm long. Early specimens had an inverted 'V' front sight without any guards. Later, two pierced rectangular guards were added to the front-sight block. The top band was pierced to allow carriage of the full-length cleaning rod which was held in place by the band retaining spring. The top band also had a bayonet bar for the Type 30 bayonet. The lower band carried the upper sling-loop and was retained by a push-in spring on the right side of the stock.

The stock had a handguard which extended from the front band as far as the rear sight bed; it also had a finger groove on each side. The rear sight had an open 'V' notch and a folding leaf graduated from 400m to 2,400m in 100m increments. The top of the receiver ring had two distinctive gas-escape holes; in the event that a cartridge ruptured, these holes channelled gases upwards and away from the firer's face. The top of the receiver also featured the 16-petalled Imperial chrysanthemum *mon* (heraldic badge) and the characters spelling '38 Type'. The receiver had two narrow grooves milled in it to allow the sliding sheet-steel dust cover





to run backwards and forwards with the bolt. The inclusion of a dust cover was controversial and came about as a result of soldiers' experiences in the Russo-Japanese War, during which rifle bolts jammed in dust storms and soldiers were forced to protect the action of their rifle with cloths.

Although the Type 38's bolt resembled that of the Gewehr 98, it was in fact extensively simplified and remodelled by Captain Nambu Kijirō to enable it to be stripped and reassembled easily without tools. The head had two locking lugs which engaged in slots milled in the receiver ring, but the head did not have the third lug found on Gewehr 98 bolts. A conventional Mauser extractor ran along the right side. The striker was hollow and the mainspring ran inside it. The striker was held in place by a large knurled knob which was also the safety. Early examples of the bolt knob had small projections around the edge to indicate the state of the action: later, this was changed to a groove. The bolt-handle knob was oval rather than round. To apply the safety, the knob was pushed in and turned approximately 45 degrees to the right to lock the striker against the receiver. There was a bolt-retaining catch to the left rear of the action.

The integral box magazine held five cartridges and had a hinged floor-plate activated by a small catch in the front of the guard bow. While this arrangement allowed for easy emptying of the magazine, it was possible for the user to press it inadvertently, with disastrous results in combat.

A Type 38 carbine. (USNPS Photo, Springfield Armory National Historic Site, SPAR 4251)





China 1938. A carrier pigeon finds a precarious perch on a Japanese cavalryman's Type 38 carbine. The safety and bolt-release catch are clearly visible. (AirSeaLand Photos)

The lower part of the buttstock was made from a separate part of wood dovetailed and glued to the upper, which allowed for smaller stock blanks and thus saved timber. The stock was further strengthened by separate top and bottom tangs extending from the action. The butt had the lower sling-loop on the underside and was finished with a forged-steel buttplate.

The Type 38 carbine was identical in form to the Type 38 rifle but had a shortened 48.3cm barrel, a smaller rear sight, variant top band and a full-length handguard.

Before and during World War II, Type 38 rifles and carbines were built in Japanese-occupied territory in Korea (Jinsen Arsenal) and China (at Mukden Arsenal, renamed Hoten Arsenal by the Japanese) as well as in Japan itself.

TYPE 38 PRODUCTION				
	Rifles produced	Dates	Carbines produced	Dates
Tokyo Arsenal	c.2,029,000	1906–32	c.210,000	1906–31
Nagoya Arsenal	c.312,500	1932–42	c.206,000	1935–42
Kokura Arsenal	c.494,700	1933–41	c.49,500	1938–41
Mukden/Hoten Arsenal	c.148,800	1937–44	c.52,300	1938–44
Jinsen Arsenal	c.13,400	1942		



THE TYPE 44 CARBINE

At the beginning of the Russo-Japanese War in February 1904, the IJA's cavalry carried the 6.5mm Type 30 Arisaka cavalry carbine. This weapon was intended to be used in conjunction with the Type 30 bayonet, on those few occasions when Japanese cavalry troops were compelled to resort to dismounted hand-to-hand fighting.

A long sword-bayonet carried at the waist is an encumbrance to any mounted man, however, and very likely the driving force behind the adoption of a short rifle with an integral folding bayonet for cavalry troops. Whatever the motivation, the Type 44 carbine (*Yonyon-shiki kijū*), a purpose-built short rifle with a folding spike-bayonet, was adopted by the IJA in 1911. The Type 44, production of which began during 1912, was chambered for the standard 6.5×50mmSR Arisaka cartridge and used the Type 38 rifle action. It had a 48.3cm barrel and a folding rear sight graduated to 2,000m. The magazine held five cartridges delivered by a conventional charger. The magazine floorplate was hinged for unloading and was released by a catch in the front of the trigger-guard bow. The front sight was triangular in cross-section, and protected by two open rectangular guards. The action ring bore the Imperial chrysanthemum *mon* and the characters spelling '44 Type', immediately behind two small gas-escape holes.

There were three distinctive Type 44 models, each with a different bayonet housing. The first type was short while the later versions were longer to give more strength. The folding spike-bayonet was 35.6cm long and of a triangular cross-section with a deep median groove on the top face. A large chequered stud locked the spike-bayonet in the open or closed position. Uniquely, there was a vestigial curved bayonet quillon attached to the right side of the mounting. The purpose of this quillon was probably to facilitate piling arms; certainly, it would have served no discernible function in bayonet fighting. The spike-bayonet was stowed in a groove under the forend when not in use.

The Type 44's forend had two grasping grooves for the soldier's fingers, in keeping with other Arisaka stocks. The spring-catch-retained upper band carried the upper sling-swivel, while the lower sling-swivel was mounted on the left side of the buttstock. The positioning of the sling-swivels meant that the bolt handle did not dig into the soldier's back when the rifle was carried slung. The buttstock was made in two pieces to reduce the size of the stock blank needed. The lower portion was glued and dovetailed to the upper portion, leaving a distinct line.

A Type 44 carbine with bayonet folded. While the Type 44 was intended for use by the IJA's cavalry, it was also issued to other mounted soldiers such as signallers and despatch riders. Although it is seldom seen in contemporary photographs, its distinctive muzzle can sometimes be seen protruding above the shoulders of some cavalymen, particularly in Manchuria during the 1930s. (USNPS Photo, Springfield Armory National Historic Site, SPAR 4253)

A close-up view of the Type 44's folding spike-bayonet. (Chantel Taylor)





A Type 44 carbine with folding spike-bayonet extended. Despite the Type 44's clumsiness and muzzle-heaviness, the latter feature proved beneficial in that it steadied the rifle when firing. Overall, however, the Type 44 was a poor design that did little or nothing to improve on the Type 38 (George 2015: 288). (Chantel Taylor

While undoubtedly handy with its folding spike-bayonet, the Type 44 carbine was markedly muzzle-heavy due to the weight of the bayonet housing. This in turn led to other problems. Of necessity, the barrel needed to be free-floating to accommodate the housing. On firing, the shock and pressure created cause a rifle's barrel to 'whip', which affects its accuracy as the bullet exits the barrel. This is known as termed barrel harmonics, and consistent accuracy is achieved by a repeatable set of harmonics. During the 1930s, laboratory tests conducted with high-speed photography by Dr Kawamura Masaya found that the Type 44's first type of mounting caused a deflection of 0.47mm, which was not conducive to accurate shooting from a short-barrelled firearm. Later patterns of mounting reduced the deflection to a more acceptable 0.091mm.

The Type 44 was produced in the Koishikawa Arsenal in Tokyo, the Kokura Arsenal and the Chigusa factory of the Nagoya Arsenal. Production began in 1912 and ended in 1942. Total production of the Type 44 is estimated to have been just 91,900, making it one of the rarest of all Arisaka firearms. In some 40 years of collecting and dealing, the author has only seen one Type 44 for sale in the UK. Detached bayonets and their mountings sometimes come onto the collector market.





THE TYPE I ARISAKA RIFLE

In November 1937, Germany, Italy and Japan concluded the Anti-Comintern Pact. Earlier that year, in July, the Marco Polo Bridge Incident, a battle near Beijing involving Chinese Nationalist and invading Japanese forces, had precipitated the Second Sino-Japanese War of 1937–45. As a consequence, all Arisaka rifle production was reserved to the IJA, leaving the IJN short of rifles. To alleviate this shortage, Italy agreed to build 60,000 rifles for Japan. The contract went to the Italian Royal Arsenal at Terni.

The barrels for the resulting 6.5mm Type I Arisaka rifle (*I-shiki shōjū*) were to be made at Terni; half of the other components were made at Regia Sezione Fabbrica d'Armi Esercito in Gardone, one-quarter were made at Fabbrica d'Armi P. Beretta of Gardone and one-quarter at Fabbrica Nazionale d'Armi of Brescia. Production started in 1938, with a team of Japanese ordnance inspectors commanded by a major being stationed at all the Italian factories or arsenals where the components were being made. Production was completed by 1941 with the rifles being delivered to the IJN. Some Type I rifles were recovered in combat during World War II on Kwajalein Atoll in the Marshall Islands.

The Type I Arisaka rifle was a curious hybrid of the Type 38 Arisaka and the Italian Mannlicher-Carcano M1891. The only part that was obviously Italian in inspiration was the bolt and receiver, albeit that the rifle used the Mauser box magazine rather than the Mannlicher type with en bloc clip. (© Royal Armouries XII.11218)



THE TYPE 99 ARISAKA RIFLE

The drive to replace the ageing Type 30 cartridge began as early as 1932 with the adoption of the Type 92 machine gun, which was chambered for the 7.7×58mmSR cartridge. Generally, machine guns are used at longer ranges than infantry rifles; consequently, their bullets need greater penetrating power and kinetic energy. Japan was not alone in realizing that its 6.5mm cartridge was underpowered; Italy adopted a 7.35×51mm cartridge for its Mannlicher-Carcano rifles in 1938.

In 1938, 300 Type 38 rifles were modified to use the 7.7×58mm rimless cartridge and tested at the Futsu Proving Ground. The results were encouraging, prompting the War Department to issue specifications for a new design of rifle rather than simply re-barrelling the Type 38. Clear specifications governed the design. The new rifle was to weigh 4kg or less. It was to have a peep rear sight graduated from 100m to 1,500m, and a lighter stock than that of the Type 38. Its design should harness existing metallurgy, and it was to have a simplified configuration to facilitate manufacture.

Four trial models were produced, two for infantry and two for cavalry. These trial models were provided by the Nagoya and Kokura arsenals and entitled 'Plan 1' and 'Plan 2' respectively. The former was merely a modified Type 38; the latter had a new action that could be built more easily.

The Plan 1 infantry and cavalry rifles were subject to final testing at the Futsu Proving Ground in May 1939 and put into production that August. Soon after production commenced, it was decided to discontinue production of the longer infantry rifle (78.7cm barrel) and concentrate on the shorter and handier cavalry rifle (64.8cm barrel). It was felt that the longer rifle was unsatisfactory for current needs and so the cavalry rifle, designated the Type 99 Arisaka (*Kyūjūkyū-shiki tan-shōjū*), became a de facto universal rifle for all arms. Few examples of the long rifle are known, although those that had already been produced must have been issued to Japanese troops.

The Type 99 resembled the Type 38 in most respects. The top barrel band still carried the bayonet bar, but was slightly different. The lower band on early production specimens had a heavy steel-wire folding

The Type 99 Arisaka rifle. (USNPS
Photo, Springfield Armory
National Historic Site, SPAR 4249)



7.7×58mm ARISAKA RIFLE AMMUNITION

Japanese experience in China revealed that the 6.5mm bullet offered poor performance at long ranges. This led to 7.7mm machine-gun ammunition being developed from 1929 onwards. In parallel with work on a heavier machine-gun cartridge, the Japanese military decided that it also needed to update its rifles. The new Type 99 rifle used a 7.7mm fully rimless cartridge with a 183-grain (11.86g) bullet propelled by 43 grains (2.79g) of flake

nitrocellulose powder. Velocity was in the region of 732m/sec, giving a KE yield of 3,173 joules. The usual versions were produced along with a grenade-launching blank. Material shortages from 1942 onwards led to the introduction of blackened lacquered steel cartridge cases, while the cartridges were put up in five-round anodized steel chargers.



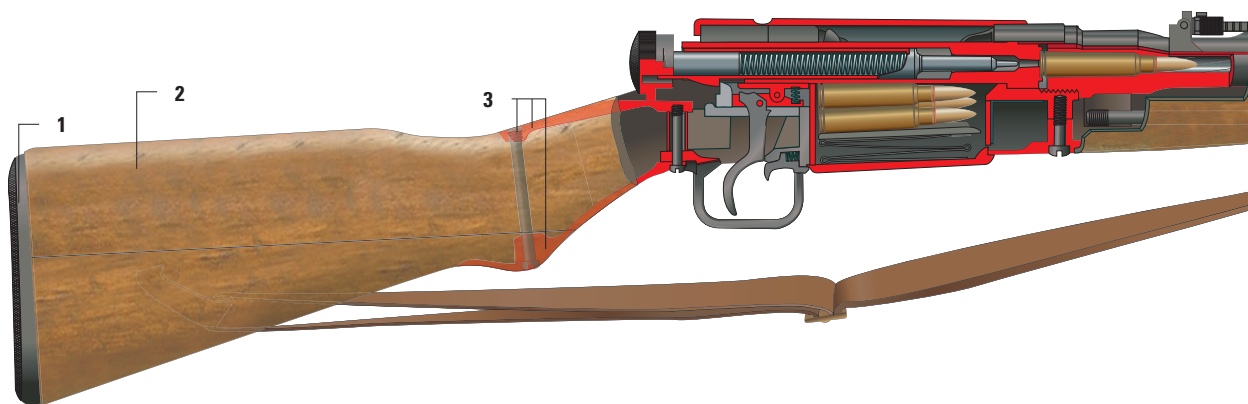
Five Japanese 7.7mm rifle cartridges are shown alongside a cartridge for the .303/7.7mm Lewis gun, the Japanese adoption of which provided the impetus for developing a larger rifle cartridge. (1) Type 92 Ball for the Japanese copy of the Lewis gun; (2) Type 99 Armour Piercing; (3) Type 99 all-steel Dummy; (4) Type 99 Incendiary; (5) Type 99 Ball; (6) Type 99 Tracer. (© Royal Armouries XX.3000, XX.3005, XX.3008, XX.3105, XX.3006 & XX.3007)

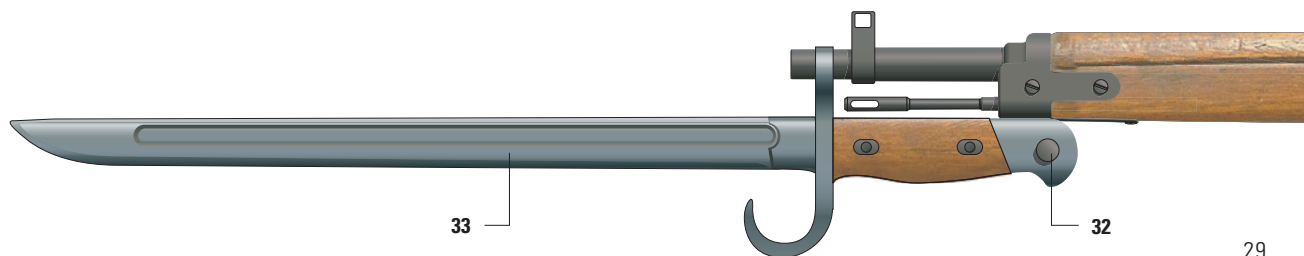
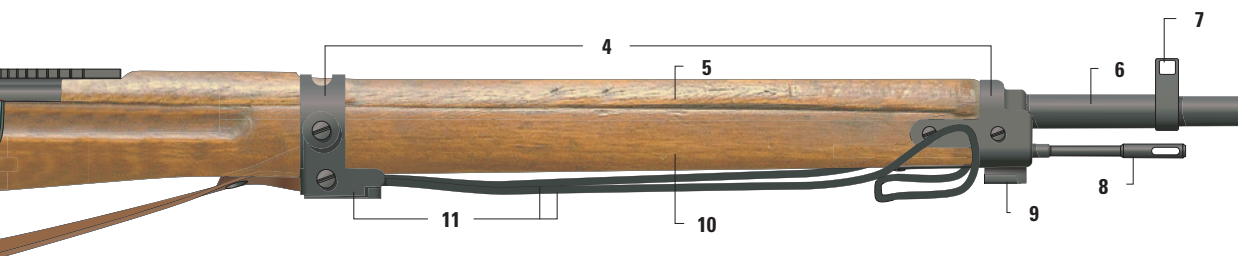
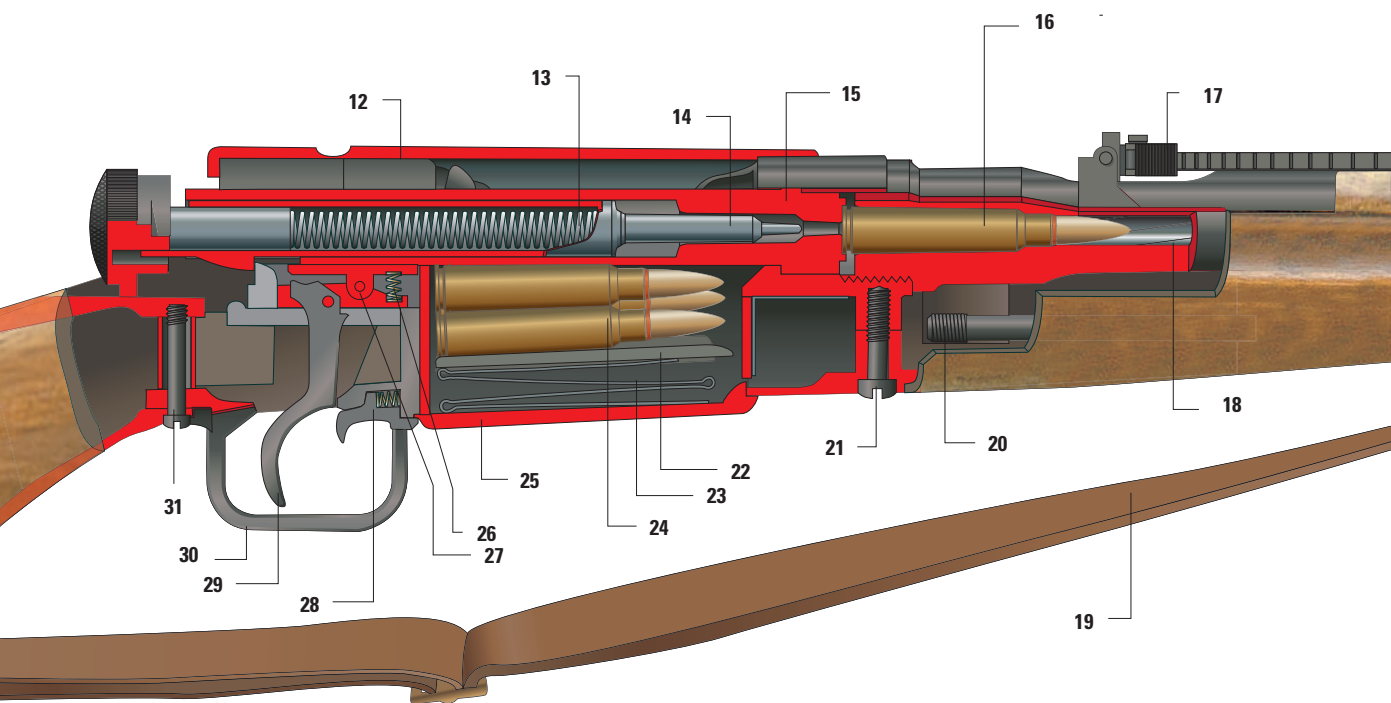


THE TYPE 99 EXPOSED

7.7mm Type 99 Arisaka short rifle

- | | | |
|--|---------------------------|---------------------------------|
| 1. Buttplate | 12. Bolt cover | 24. Cartridges in magazine |
| 2. Butt | 13. Firing-pin spring | 25. Magazine floorplate |
| 3. Stock support tangs and retaining screw | 14. Firing pin | 26. Sear spring |
| 4. Barrel bands | 15. Bolt | 27. Sear |
| 5. Handguard | 16. Cartridge in chamber | 28. Floorplate latch and spring |
| 6. Barrel | 17. Rear sight | 29. Trigger |
| 7. Front sight | 18. Barrel rifling | 30. Trigger guard |
| 8. Cleaning rod | 19. Sling | 31. Rear retaining screw |
| 9. Bayonet bar | 20. Cleaning rod | 32. Bayonet press stud |
| 10. Stock | 21. Front retaining screw | 33. Type 30 bayonet |
| 11. Heavy wire monopod and mount | 22. Magazine follower | |
| | 23. Magazine spring | |







ABOVE

The Type 99 rifle monopod.
(Chantel Taylor)

INSET

A view of the breech area of a Type 99 rifle showing the Imperial chrysanthemum *mon*, single gas-escape hole and Kanji characters for '99 Type'. (Chantel Taylor)

monopod to give stability in the prone position. Peep sights replaced the barleycorn and 'V' notch of the Type 38. The Type 99's action retained the same pressed-steel cover of the Type 38.

The sling-swivels were located on the left-hand side and the buttplate was made from pressed sheet steel rather than a forging, in order to simplify production. A full-length cleaning rod was carried under the barrel. The bore and the bolt face were hard-chrome-plated to resist corrosion. The stock had a drain hole in front of the magazine. The magazine floorplate catch was moved from the front of the trigger-guard bow to immediately in front of the trigger, where it was less likely to be snagged accidentally. The receiver was still stamped with the Imperial chrysanthemum *mon*, but had only a single gas-escape hole.

In the last months of World War II, production of the Type 99 became increasingly simplified. What are known as 'last-ditch' rifles were very crudely made with fixed sights, crude stocks with wooden buttplates, rough welded safety knobs and no sling-swivels. The rationale was that with the invasion of Japan imminent, every able-bodied citizen needed a firearm to resist the invader. The 7.7mm cartridge was found to be too powerful, so many of these Type 99s were chambered for the 8mm Nambu pistol round instead. It is most likely that these crude and hastily made rifles contributed to the Arisaka's undeserved reputation for being badly made and potentially dangerous. The reality is quite the opposite: the Arisaka was made of excellent materials and was very strong. Some reported failures may have been caused by ball cartridges being used in training rifles that were only designed for use with blank ammunition.



USE

The Arisaka goes to war

ARISAKAS IN JAPANESE SERVICE

The Type 30 was the IJA's standard-issue infantry rifle until about 1906, when it began to be superseded by the Type 38 Arisaka. About 10,000 Type 30 rifles were converted as training rifles by smooth-boring them for use with blank ammunition only. Many Type 30 rifles were sold to the United Kingdom at the beginning of World War I. During the 1920s, some Type 30 rifles used for drill in the school system were sold to the Chinese. The Type 99 commenced production in August 1939; it never entirely supplanted the Type 38, which remained in Japanese service until the end of World War II.



A rare study of three Japanese infantrymen during the First Sino-Japanese War of 1894–95. The soldiers wear M1886 caps (apparently without arm-of-service bands) and greatcoats with their collars turned up against the cold. They are armed with obsolete 11mm Type 18 Murata single-shot rifles and are festooned with field gear including tin mugs and net bags for rations. The purpose of the round gourd-like object carried by the central sitter is unknown, but it may have contained sake. (AirSeaLand Photos)



ABOVE LEFT

Two Japanese soldiers negotiate their way across a very muddy and water-logged campsite, probably during the Russo-Japanese War. They have removed their trousers and are carrying their shoes. The soldier at left is armed with a Type 30 or Type 38 rifle while his comrade has a Type 30 or Type 38 carbine. The latter soldier is carrying a Type 30 bayonet for his carbine, suggesting that he is an artilleryman. (AirSeaLand Photos)



ABOVE RIGHT

Two Japanese sentries wearing goatskin coats and fur hats in Siberia, 1918–22. They are probably part of the 12,000-strong Japanese contingent that landed at Vladivostok after July 1918. The left-hand figure is pressing a charger of cartridges into the magazine of his Type 38 rifle. (AirSeaLand Photos)

Japanese marksmanship

Two plates from a Japanese training manual are shown by Honeycutt & Anthony (1996: 54 & 152). The first shows a soldier in the prone position firing his rifle unsupported. Considerable emphasis is placed on the correct positioning of the elbows, which provide stability during firing. The second picture shows a seated soldier. Great store is set on the elbow resting on the knee to achieve rigidity. The leading hand is shown placed well forward to support the rifle's forend. It is reasonable to conclude from such depictions that the Japanese military thought it very important to instil the principles of good marksmanship that emanate from adopting a stable position. Given the biddable nature of the Japanese soldier combined with the very strict Japanese disciplinary system, it is highly likely that these principles were instilled from the earliest days. This, combined with the relatively low-powered 6.5mm Arisaka cartridge and its light recoil, undoubtedly contributed to a reasonable level of marksmanship.

George refers to a Japanese marksmanship school with German involvement, but gives no further details about this institution (George 2015: 250). He also describes the Japanese predilection for assuming a squatting position when firing. This came naturally as Japanese peasants in country areas used this position for rest. It was quicker to assume and rise from this squatting position than the sitting position favoured by the Americans. George also notes that the Japanese seemed to be more supple than their American counterparts and that they could assume the kneeling position with great ease.

During World War II, the Japanese proved to be masters of camouflage and infiltration of enemy positions. By their very nature, these techniques



reduced the range to any target, giving a greater chance of hitting it. This, combined with a general inclination to support the rifle's forend when firing, was also an important aid to effective marksmanship. George notes that sandbags or forked rests were widely used to support the rifle (2015: 249).

The design of the Type 99 rifle promoted accuracy by updating the sights and adding the monopod. Some contemporary commentators have questioned the utility of this monopod and suggested that it was flimsy. That may be so when compared with modern hunting-rifle bipods, but anything that made any contribution to the stability of the Type 99 during firing must have been welcomed. Perhaps one of the Type 99's most significant improvements was the addition of peep sights. Admittedly they were too far forward to achieve ocular correctness, but they were a great improvement on the barleycorn and 'V' notch of the Type 38. The battle sight was zeroed at 100m and the lowest setting for the peep sight in the folding leaf was 300m. The folding leaf of early examples had folding arms or 'wings' on either sight for use during anti-aircraft fire. The wings were intended to give automatic deflection and were graduated from 100km/hr to 300km/hr.

Little is known about what Japan's opponents thought about the effectiveness of Japanese rifles or their general standard of marksmanship and fire discipline. The main factors behind Japanese battlefield success during World War II lay in their mastery of camouflage, concealment and

Japanese soldiers in M1904 summer khaki uniforms during the Russo-Japanese War. Their Type 30 rifles are piled in threes in front of them. At least two of the soldiers are wearing havelock neck-guards with their field caps. (AirSeaLand Photos)

Japanese schoolgirls wearing uniforms inspired by traditional naval 'square rig' dress march on their way to rifle practice with Type 38 rifles. They are preceded by their instructors, who wear Type 90 uniforms with high collars and rank badges on the shoulders. (AirSeaLand Photos)



A Japanese infantryman working the bolt of a Type 38 rifle. The steel bolt cover is apparent and the rear sight is raised for firing at longer ranges. The oil bottle is visible on the side of the rear pouch. (AirSeaLand Photos)

innovative choice of protected fire positions. These factors, combined with their infinite patience and resolution, allowed them to reduce ranges of engagement to distances where marksmanship was no longer an important consideration. When fired from a Type 38 rifle, the 6.5mm cartridge has negligible recoil and minimal muzzle flash. The first aided marksmanship, particularly as the average Japanese soldier was of lesser stature than a European. The second helped to maintain the integrity of his already excellent personal camouflage skills by not giving away his position.





The Arisaka in close combat

Japan's long association with the sword as carried by Samurai warriors continued into the era of modern military small arms through the emphasis on the use of the bayonet. The Samurai warrior had the code of *Bushidō* to inspire and guide him. This code held that the most honourable way in which to fight was to confront the enemy face-to-face with cold steel. As ordinary soldiers were not entitled to carry swords, the bayonet became their de facto *Bushidō* substitute weapon.

ABOVE LEFT

A Type 99 rifle's rear sight in folded position showing the battle sight. (Chantel Taylor)

ABOVE RIGHT

A Type 99 rifle's rear sight in raised position showing one aircraft lead arm deployed. (Chantel Taylor)

Port Arthur (overleaf)

Japanese infantry attack Russian trenches during the siege of Port Arthur in the winter of 1904/05. The Japanese soldiers are mainly armed with the new 6.5mm Type 30 Arisaka rifle and bayonet, although one man still retains the obsolete 8mm Type 22 Murata repeating rifle which was still issued to reservists and others. The Russian defenders are armed with the 7.62mm M1891 Mosin-Nagant rifle and bayonet. Their uniforms are ragged after several months without regular supplies and the emphasis is on practicality and comfort rather than aesthetic appearance. By contrast, the Japanese have access to proper winter clothing as their supply lines are open. They wear fur-lined greatcoats. As the emphasis is on mobility in the attack, the Japanese wear only light fighting-order equipment comprising ammunition pouches, bayonets, haversacks and water bottles. Attacks on trenches protected by barbed-wire entanglements were always costly in terms of casualties and set a chilling precedent for war in Europe a decade later.





Japanese infantry in Shanghai, c.1937. The soldiers carry Type 38 rifles with Type 30 bayonets fixed. The extreme length of the Type 38 rifle with its fixed bayonet is apparent. (AirSeaLand Photos)



Posed photograph of Japanese infantry training in the Marshall Islands during World War II. The figure in the foreground has an Imperial Rising Sun (*hinomaru*) flag tied to his Arisaka rifle. (AirSeaLand Photos)

The tradition of aggressive bayonet fighting by Japanese infantrymen had its genesis in the Russo-Japanese War. A year after the war ended the US military conducted trials to find a new design of bayonet. The trials committee studied evidence from the Russo-Japanese War and concluded



THE TYPE 30 BAYONET

Throughout the Arisaka rifle's 48-year service, only the original Type 30 bayonet was issued with it. The bayonet did not develop in any way and aside from minor manufacturing short-cuts was essentially the same throughout this period. The Type 30 was a sword-bayonet with an overall length of 51cm and a single-edged, fullered blade of 39.7cm with an arc-shaped edge which terminated in a point. The blade was sharpened for the first 15cm or so to facilitate penetration and withdrawal. The grip had a spring-locking catch in its steel, bird's-head-shaped pommel and wooden grip scales secured by two screws. The guard had a full muzzle ring and a hooked quillon with a slightly flattened end. (Japan abolished the quillon in the late 1930s, probably due to it becoming snagged in jungle foliage.)

The Type 30 bayonet was made at the Kokura, Nagoya, Jinsen, Mukden and Tientsin arsenals and the Toyada Automatic Loom Works. Other contractor marks are known, but have not been identified.

Towards the end of production, the Type 30 bayonet not only lost its quillon, but its pommel was left square and its blade unfullered; changes intended to simplify manufacture in wartime. Some very late-war bayonets were made without muzzle rings or locking catches. These were last-ditch defence weapons intended to arm the civilian population, who were to make pikes by attaching the bayonets to poles.

The Type 30 bayonet was contained in a blued steel scabbard with a ball at the chape end and a bar for the frog strap to pass through just below its throat. As raw materials became very scarce, wooden scabbards were issued. These were produced as a cottage industry without any standardization and were reinforced with bands of wire or twine.

The Type 30 bayonet was carried in a simple frog so that it hung down over the soldier's left buttock. The bayonet was secured by a small vertical strap which passed through the loop on the scabbard top, before being fastened with a small buckle. The buckle is found in a variety of materials and finishes – steel, brass and aluminium: sometimes lacquered or plated. The front piece of the frog is stitched and the top is reinforced by two small rivets and washers. The very earliest frogs had a long belt loop but this later changed to a shorter, squarer loop with a central slot with rounded ends. The belt loop was used in conjunction with a cloth strap on the tunic which passed through it, helping to take some of the weight off the soldier's hips. Later, the belt loop was separated to give a 'Y' appearance. Rubberized-canvas examples can be encountered as well as green webbing types, which are probably World War II emergency production. There is great variation in bayonet frog detail; Carter shows 16 distinct types (Carter 1983).



A Type 30 bayonet and scabbard. (© Royal Armouries PR.2807)

A Japanese soldier crouches and makes ready to launch a bayonet charge in China, 1938. His Type 38 rifle has its bayonet fixed, exemplifying Imperial Japan's overarching tactical doctrine of 'cold steel' at close quarters. While this worked against relatively unsophisticated enemies, its continuing use against Allied troops during World War II cost the Japanese dearly in casualties. This was due to the high preponderance of Allied automatic weapons and in the case of the Americans, self-loading rifles. This rifle's forend is adorned with a *yosegaki hinomaru* flag, probably signed with good wishes from the soldier's family and friends. (AirSeaLand Photos)



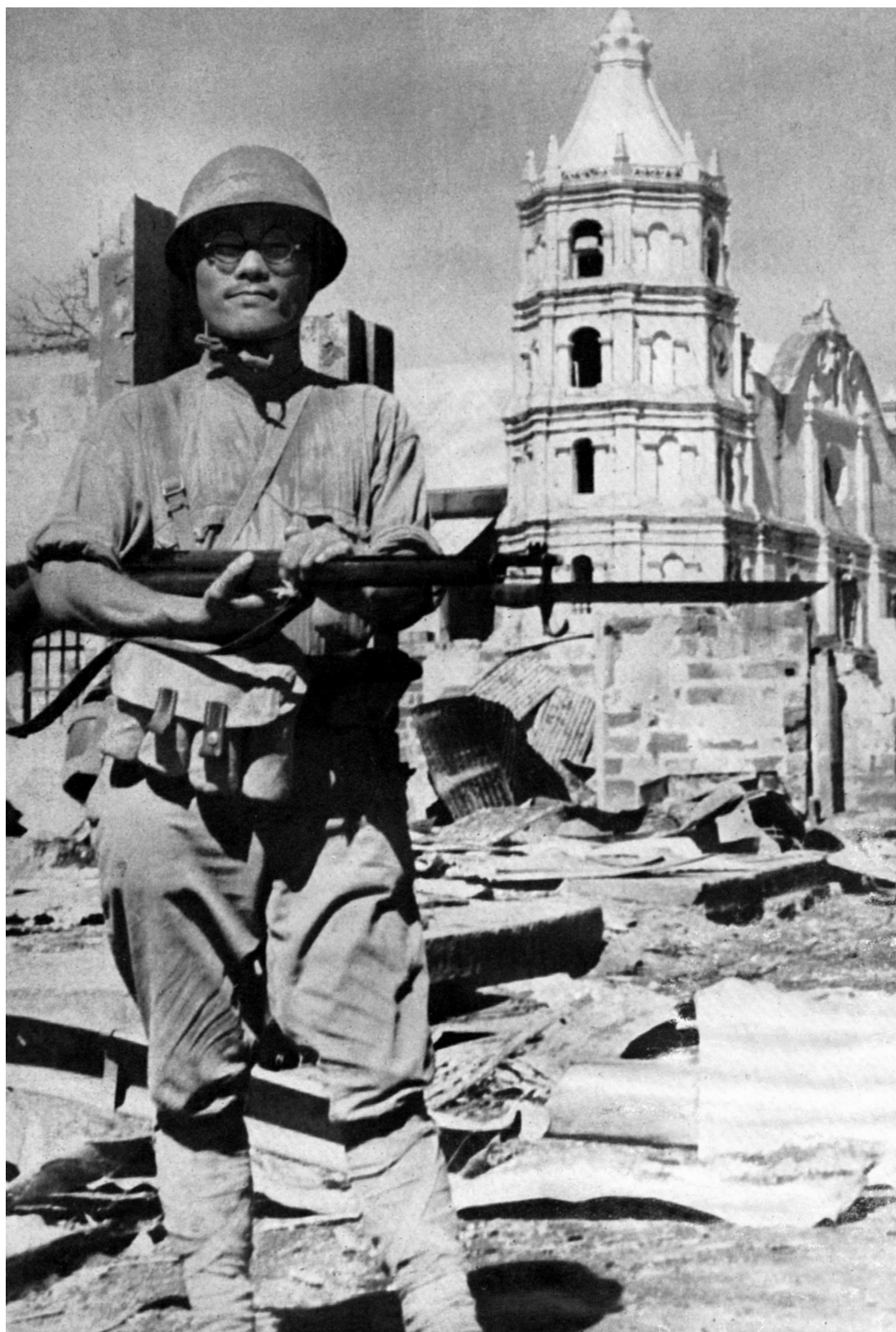
that the bayonet was still a viable weapon, as evidenced by its use during night attacks that formed an important part of most battles during the war (Johnson 1988: 7).

In 1890, Japan adopted the Imperial Rescript on Education, which was intended to standardize education in schools as well as implanting a sense of total obedience to the Emperor's authority. Militarism took root easily in this climate, especially during the Russo-Japanese War. From 1925 onwards, serving officers were assigned to every boys' school and youth training centres for military instruction were set up.

Consequently, bayonet training began early within the Japanese school system, which in turn ensured that most recruits to the Imperial Japanese armed forces were already familiar with the bayonet. This early exposure helped to imbue the Japanese serviceman with the basic philosophy of closing with the enemy to give him cold steel. Clear evidence that such doctrines took root is provided by Japanese casualty figures, which are a reversal of the norm. During World War II in the Pacific theatre, the Japanese lost some 1,800,000 dead compared to only 140,000 wounded. These casualty figures are very significant. In armies which did not have the overarching ethos of offensive action with cold steel, the dead are always in the minority followed by much larger numbers of wounded and even larger numbers of prisoners. As most Japanese soldiers had been inculcated with the belief that dying in battle for the Emperor was a supreme service and that to surrender was to lose all personal honour, it is unsurprising that the Japanese dead massively outnumbered those taken prisoner or wounded.

OPPOSITE

A Japanese soldier armed with a Type 38 rifle with fixed Type 30 bayonet stands amid the rubble of a city in the Philippines. This photo shows the minimal field equipment carried by the Japanese soldier. In addition to his rifle equipment, this man carries one of the special pouches for 5cm Type 89 grenade-discharger bombs. (AirSeaLand Photos)



Three Japanese pioneer soldiers during the Boxer Rebellion wear the equipment used with the Type 22 Murata rifle. They are also armed with what is known as the second-variation bayonet by modern-day collectors. The soldier on the left is equipped with a dismantled pickaxe the long handle of which projects from the left side of his fur-covered pack. The pickaxe head is contained in a leather cover carried on the top of the pack. The soldier on the right is similarly equipped with a shovel. The central figure is a sergeant with rank braid on his cuffs. He has two ammunition pouches supported by leather 'Y' straps that mirror those of many European armies of the period. The long steel pommel and short wooden grip of the fixed second-variation bayonet are readily apparent. (AirSeaLand Photos)



Arisaka rifle equipment

Essentially, the Japanese rifleman's equipment remained unchanged during the Arisaka rifle's 48-year period of service. It was simple and functional, consisting of a leather waist-belt, two front ammunition pouches, the Type 30 sword-bayonet in a frog and a large box-shaped rear ammunition pouch. Originally, the equipment was made of high-quality russet-coloured leather. From 1937 onwards, however, Japan began to experience shortages of raw materials and rubberized canvas with a pinkish hue was increasingly substituted for leather.

A party of Japanese sailors from the Special Naval Landing Forces in China, c.1932. The sailors wear traditional shipboard uniforms and carry Type 38 rifles with Type 30 bayonets fixed. The large rear (magazine) pouches worn in the small of the back are readily apparent on the kneeling figures in the foreground. Some of the men wear cloth combat caps under their helmets, a characteristically Japanese military practice. (AirSeaLand Photos)





Two five-round chargers of cartridges for Arisaka rifles. At left is a sheet-steel charger with five 7.7mm ball cartridges with rose-coloured neck seals. At right is a sheet-brass charger with five 6.5mm ball cartridges. (Chantel Taylor)

There were two major suppliers of ammunition pouches; Sanyo Leather in Hyogo and Japan Leather in Osaka. The Type 30 front pouches were made in the form of truncated segments divided into two sections. Each section held a cardboard packet containing 15 cartridges in chargers of five rounds each. The packet was inserted whole and the top ripped off with a tear tape when the ammunition was needed. The front pouches were for ‘ready use’ ammunition. The tops of the front pouches opened away from

Guadalcanal (overleaf)

Part of a Japanese infantry section launches a *banzai* charge on entrenched American troops on Guadalcanal in the early hours of 21 August 1942. They are armed with 6.5mm Type 38 and 7.7mm Type 99 Arisaka rifles with fixed Type 30 bayonets. Japanese tactics emphasized closing with the enemy and then using the bayonet, in the traditions of the Samurai. Suicidal bravery such as this resulted in high Japanese casualty rates. Evidence of this can be seen in the bodies of these men’s comrades, killed as they reached the enemy perimeter.

The Japanese relied on patient infiltration tactics to get as close to an enemy position as possible before breaking cover. The Japanese charge was often preceded by a barrage of Type 97 fragmentation grenades. Theoretically these measures reduced Japanese casualties, but while such a charge unnerved some troops it would have had little effect against Americans armed with the M1 Garand self-loading rifle, the standard-issue rifle for the US Army that was replacing the M1903 Springfield in US Marine Corps service during the battles for Guadalcanal.

The leading man wears a field cap with the four-strip havelock-type neck-guard. He has tied a *yosegaki hinomaru* flag to the sling-swivels of his rifle. As well as sporting the rising-sun motif, this flag is inscribed with good-luck wishes from family and friends. The man in the foreground wears a *hachimaki* headband in Samurai style. The men in the immediate background wear M1932 steel helmets, with the wounded man wearing his over his forage cap in typical Japanese style. The Japanese wear minimal field equipment – front and rear ammunition pouches, bayonets, water bottles and haversacks – for enhanced mobility.





A reproduction front ammunition pouch from Arisaka rifle equipment. During World War II the assembly and loading of ammunition was performed at supply depots, rather than in arsenals. These depots were on the island of Honshu at Tokyo, Nagoya, Hiroshima, Nagano and Sendai. In more recent times, sporting cartridges for both calibres have been loaded in Sweden by Norma, Nammo, Norinco and Prvi Partisan. (Chantel Taylor)



the soldier's body. They were secured by a long strap, fastened by a single loop. The pouches resemble Russian M1891 Mosin-Nagant rifle pouches in that the flap-securing strap is secured by two brass studs down the sides. The front pouches are typical of many late 19th-century ammunition pouches made to carry small-calibre rifle cartridges put up in chargers.

When the Type 99 rifle was introduced into service, the construction of the front pouches changed. The revised body was made out of two pieces of leather, joined by a seam. The edges of this frontal seam are visible at the base of the Type 99 pouch whereas the Type 30 pouch does not have such a frontal seam. The lid-fastening strap was retained by two small loops, presumably to make its loss less likely. While this new method of construction may have involved more man-hours, it saved on raw materials, which was a more important consideration.



A reproduction front ammunition pouch from Arisaka rifle equipment with cover flap open showing a charger of 6.5mm cartridges to the right and a replica unopened packet of 15 cartridges to the left. (Chantel Taylor)



A reproduction rear ammunition pouch from Arisaka rifle equipment with a 'D'-section oil bottle on its harness on the right-side end. This pouch carried the soldier's reserve of 60 cartridges in four unopened packets. (Chantel Taylor)

Cavalry and other mounted troops were issued with a distinctive type of pouch. This resembled the Type 30 pouch, but was generally carried slung over the shoulder by means of a leather strap. (It also had belt loops on the rear.) The pouch carried two boxes of 15 cartridges each and had loops for the chamber tool and the brass jag issued with the Type 44 carbine. The flap was secured by a tab similar to that of the infantry rear pouch.

The rear pouch acted as the soldier's magazine for his reserve ammunition. The concept of a 'magazine' pouch in modern times appears to be peculiarly Japanese, but it should be remembered that soldiers in the Spanish Civil War also wore a standard-sized pouch in the small of the back. Again, the Japanese rear pouch was split into two sections and held 60 cartridges in four packets. These packets fitted in by having a top side and a bottom uppermost. The pouch was provided with a finger-hole in the bottom of each section to allow the packets to be pushed out ready for transfer to the front pouches.

Perhaps the rear pouch's most distinctive feature was the oil bottle carried on its right-side end. A strap secured the bottle by fastening over a knob on its top. Early oil bottles were circular while later ones were of a larger 'D' section. Originally, the oil bottle had a blued steel body with a brass top. Wartime examples were made of Bakelite or similar plastic. Rear pouches made after 1916 and before 1934 had a pocket for a combination tool/screwdriver on the left-side end. Any rear pouch encountered without the screwdriver pocket will have been made after 1937. Originally, rear pouches had an 'L'-shaped chamber-cleaning rod carried in loops on the front face. This was omitted from 1903; presumably, losses in service of these externally carried tools persuaded the Japanese military that they were best kept stowed in the soldier's haversack instead. After 1916, the rear pouch's closing tab was reinforced by a small crosswise strap. The rear pouch was discontinued in service from 1934 to 1937, with the result that spare ammunition and tools were henceforth carried in the haversack.

Some military historians question why the Japanese never issued shoulder braces to support the weight of a fully laden set of equipment on the soldier's shoulders; again, the Japanese are unique in not doing so. Although this would seem to have placed the Japanese soldier at a

Two Japanese soldiers in China, c.1933. They carry Type 38 rifles with fixed Type 30 bayonets and wear M1932 steel helmets. The figure in the foreground has an early rear (magazine) pouch in the small of his back. The pouch has a narrow pocket for the combination tool/screwdriver on the left side. The rear pouch was withdrawn from service in 1934. When it was reintroduced in 1937, the screwdriver pocket was discontinued, leading to the screwdriver being carried in the small haversack. (AirSeaLand Photos)



disadvantage, it has been noted that this freedom of movement allowed the soldier to push the front pouches to the sides of his body so he did not have to lie on top of them when he was in the prone position (George 2015: 249).

Equally, when the soldier was standing, the pouches tended to move together to the most comfortable position at the front where they did not cramp his body or interfere with the movement of his limbs, even if his belt was hung loose and low around his hips (George 2015: 251). When resting and lying on his back, the Japanese soldier simply pushed his rear (magazine) pouch round to the side. None of this would have been possible if the soldier was wearing shoulder braces. Rather than being burdensome to the soldier, his equipment actually conferred a lot of flexibility in use. The weight was dissipated by a small strap sewn into the tunic's rear waistline as well as small hooks into which the waist-belt fitted.

The equipment was completed by an adjustable leather sling of conventional form. Sometimes the sling was made of woven rope or webbing. Some slings had quick-detachable hooks rather than the usual hole and brass stud fastener.

Original Japanese Arisaka rifle equipment is rarely encountered today – hard wear in a humid, moist climate coupled with the post-war mass destruction of all Japanese war materiel have contributed to that dearth. Examples occasionally come onto the collector market through dealers and internet auction sites, but the rarity of such items makes them accordingly expensive. Good replica pouches made in China or India can provide collectors with an inexpensive substitute, however. Replica Type 99 pouches predominate, but replica Type 30 pouches are available from some outlets. Replica pouches can be carefully artificially aged with dye and boot polish to give an original appearance. Anyone lucky enough to acquire original specimens of any rubberized-canvas equipment needs to treat them with great care as they become very brittle with age; straps break easily as do the hinges on pouch lids. Stitching in any equipment is often rotten, a legacy of the jungle climate.

OPPOSITE

A squad of Japanese infantry deployed to protect a railway line in China, October 1937. These soldiers may be from the Railway Protection Corps whose role was to guard vulnerable railway lines from attacks by Manchurian guerrillas. The figure in the foreground provides a good view of the bayonet and the front and rear ammunition pouches. The rear pouch appears to have the small pocket for the combination tool on the left side. The squad is supported by a Type 11 Nambu light machine gun, which fired Type 38 rifle cartridges from rifle chargers in a spring-loaded hopper. (AirSeaLand Photos)



A Type 99 rifle with muzzle cover fitted. This is a good modern reproduction of the muzzle cover as original examples are very rare. (Chantel Taylor)



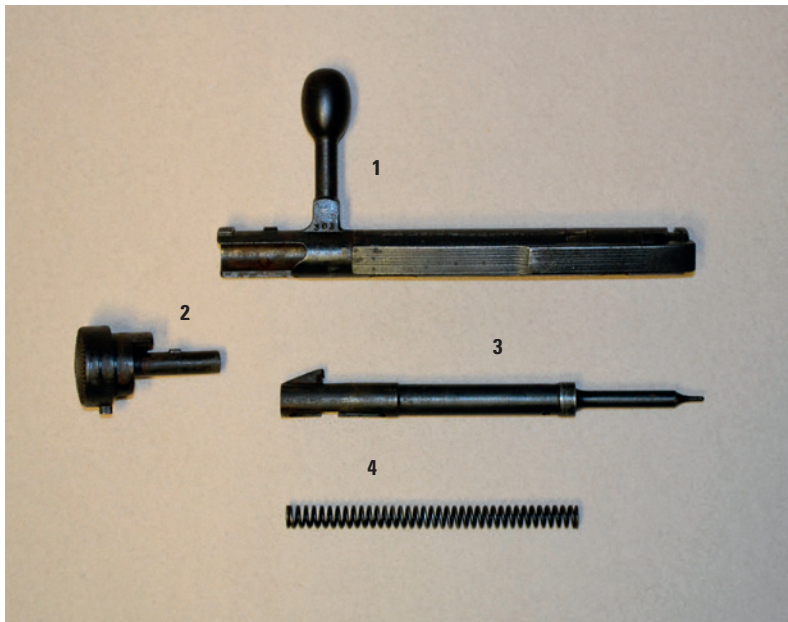
All Imperial Japanese longarms were issued with a muzzle cover that engaged over the front sight and was held in place by a spring-loaded internal plunger. Originally, the muzzle cover was brass, but latterly brown Bakelite. Good modern copies made from brown resinous plastic exist. The Type 44 carbine had its own special types of muzzle cover; one is distinctive to the first-model bayonet housing, another fits the second and third models. Both types of Type 44 muzzle cover have hinged lids rather like those found on Mauser Gewehr 98 types.

Cleaning and maintenance kit

Throughout the period covered by this study, the Arisaka rifles carried by Japanese forces had to function in a wide variety of climatic conditions. At its height in 1942, the area conquered by the Japanese comprised Manchuria, Korea, much of South-East Asia and the major islands of the Pacific. These territories had a wide variety of climates. For example, Manchuria has extreme seasonal contrasts ranging from humid, almost tropical heat to dry, Arctic-type cold where temperatures fall to -30°C . Korea has harsh winters of long duration. By contrast, much of South-East Asia and the Pacific islands are covered by tropical rainforest.



A Type 99 rifle with the hinged magazine floorplate open to show the spring and follower. (Chantel Taylor)



Components of a disassembled Arisaka rifle bolt: body with extractor (1), cocking piece with integral safety button (2), striker with sear (3) and mainspring (4). (Chantel Taylor)

Each of these climatic types posed its own problems for the use and maintenance of Arisaka rifles. Extreme cold caused rifle actions to bind as frost lock took hold; dust from arid environments caused jams; and the warm humidity of the tropics engendered rust that needed constant preventative maintenance. George states that routine water cleaning was necessary to counteract the effect of rust caused by the tropical humidity, and lauds the eventual issue of bore cleaner and ammunition with non-corrosive primers to US personnel (George 2015: 447). The Arisaka's simple action and rugged nature would enable it to prevail over all that the environment could throw at it. Its reliability as a service rifle meant that the Japanese serviceman could function in any environment, however hostile.

The Japanese soldier was issued with a very good set of rifle cleaning implements, contained in a canvas pouch the contents of which comprised a rod extension, a hockey-stick-shaped short rod for cleaning the chamber, a brass jag, a bore brush, a pull-through and a bolt-shaped wooden implement which was the cleaning-rod guide. The Imperial Japanese serviceman was also provided with a rod carried under the bore of his rifle as the principal means of cleaning his weapon. The rod had a small slot in a reinforced section for a piece of rag at the muzzle end. The other end was threaded to engage with the brass jag.

The golf club-shaped tool was very useful for ensuring that the chamber and the bolt lug recesses in the action were kept clean. The oil bottle carried on the rear pouch was of a large capacity, ensuring that the soldier did not lack sufficient oil for lubrication and preservation. The simplicity of the bolt and its ability to be dismantled without tools was a major factor in ensuring that proper and regular maintenance took place. The Japanese soldier was at an advantage over many other nations – especially the British, who only issued oil and a pull-through – when it came to the quality of his rifle-cleaning implements.

A view of a Type 44 carbine's butt trap with valve-like actuating catch. (Chantel Taylor)



Jungle climates made careful weapon cleaning doubly important as the humidity combined readily with primer residue to cause serious corrosion. Boiling out the bore with water was the only method guaranteed to remove corrosive salts, but this was a laborious task that could not be performed in the front line. George shows two soldiers in a rear area cleaning a rifle with the body supported on a 'Y'-shaped stick and the rifle's muzzle in a bowl of water (George 2015: 447).

The complicated mounting for the Type 44's folding spike-bayonet precluded the fitting of an under-barrel cleaning rod as was usual with Arisaka rifles. Instead, the cleaning rod was made in two screw-together steel sections with a rotating brass jag to hold the cleaning material. In the early carbines, the jag was carried on the outside of the special cavalry ammunition pouch; latterly it was stored in the buttstock with the cleaning-rod sections when not in use. The cleaning-rod sections were accessed by a unique rotating butt trap. Instead of being located on the face of the buttplate like most conventional traps, the butt trap was located at the upper right side. Access was controlled by a slotted quadrant-shaped catch running in a semi-circular baseplate. Rotating the catch through 90 degrees operated a 'valve' which allowed access to the holes for the cleaning-rod components via a central oval hole.

Japanese rifle grenade launchers

A rifle grenade gives every infantryman his own close-range mortar, and allows him to engage targets with explosive ordnance at much greater ranges than a hand grenade can be thrown.

Japan first used special grenade-launching rifles during the siege of the German port of Tsingtau (now Qingdao) in China in October–November 1914. They were also used by Japanese forces fighting in Siberia during 1918–22. These specialized rifles used a grenade with a rod attached to its base that was inserted into the rifle's barrel. The propelling gases were provided by a blank cartridge. The rifles were based on converted Murata Type 18 and specially manufactured Arisaka Type 38 rifle actions; this



A Type 100 grenade launcher showing the cup above the extension to the rifle barrel. (USNPS Photo, Springfield Armory National Historic Site, SPAR 7155)



probably explains the scarcity of the former rifles as most seem to have been converted for this specialized purpose.

During the early months of World War II, the Japanese developed spigot-type grenade launchers in which the finned base of the missile slid over the spigot. Propulsion was provided by a special blank carried on the tail assembly of the grenade. Originally conceived for use with a hexachloroethane smoke grenade, the spigot launcher eventually delivered a variety of munitions including anti-tank, anti-personnel and white-phosphorus grenades.

In 1939, the Japanese began to develop a cup-type launcher which was eventually adopted as the Type 100. Rather than using a blank, the Type 100 used a standard ball cartridge the bullet of which exited via a tube but the propellant gases of which were channelled at right angles into the cup under the grenade to launch it. This process was both logistically and tactically very efficient as the soldier did not have to worry about changing ammunition; nor did he have to remove the launcher to continue to fire ball cartridges in an emergency.

In 1942, a delegation of German ordnance officers under Oberstleutnant Paul Niemöller and Hauptmann Walter Merkel brought examples of their 3cm hollow-charge anti-tank grenades for Japanese consideration. The Japanese copied these and designated the new launcher the Type 2.

Late in World War II, Japan proposed to arm all able-bodied citizens in defence of the Home Islands. This in turn spawned a variety of simply made, improvised grenade launchers, one of which even envisaged the use of bamboo. These grenade launchers were not manufactured centrally, but were produced locally using a variety of widely disseminated plans.

A Type 2 grenade launcher for the Arisaka rifle. (© Royal Armouries PR.13007)

A Type 2 grenade launcher fitted on the muzzle of a Type 38 Arisaka rifle. (USNPS Photo, Springfield Armory National Historic Site, SPAR 7255)



Arisaka sniping rifles

As Japan played little part in land warfare during World War I, the country was not subjected to the tactical impetus to develop snipers and sniping rifles in the way that combatants in the European theatre were. Consequently, the Japanese military already had access to all kinds of well-established sniping doctrines, tactics, experiences and existing technology when it first began looking at sniping in the late 1920s.

Despite this late start, the Japanese sniper attained legendary status among US troops during World War II. Whether this was justified is debatable as Japanese sniping was usually conducted at short ranges, against multiple targets and from imaginative prepared positions with known ranges to targets. Japanese snipers were patient and the masters of field craft and camouflage. That alone made them formidable enemies. The Japanese predilection for posting snipers in trees may have made for an effective first shot from an unexpected quarter, but raking the canopy with machine-gun fire generally prevented further sniper fire. One thing that is striking is the complete anonymity of Japanese snipers in the post-war written record. This is probably accounted for by the complete demilitarization of Japanese society after the war.

The first sniping rifles in the Japanese arsenal were Type 38s fitted with a variety of telescopic sights in a variety of mounts. In the late 1930s, Colonel Tatsumi Namio of the Army Research Institute in Tokyo began work on a programme to develop a standardized sniping rifle. Trials at the Futsu Proving Ground showed that Tatsumi's modified rifle offered 10 per cent better accuracy at 300m and 30 per cent at 600m. The result was the Type 97 – no more than a slight modification of the Type 38 – which was officially adopted as the Type 97 sniping rifle in 1937. Features included a slightly longer, turned-down bolt handle with the characteristic plum-shaped knob and a fixed-focus 2.5× telescopic sight offering a 10-degree field of view and mounted on the left side of the receiver. The telescope was not mounted over the bore as on most sniping rifles, but parallel to it, like the British SMLE sniping rigs of World War I. (Sniping rifles with fixed mounting plates and non-adjustable telescopic sights are unique to the Japanese armed forces of the 1930s and 1940s.)

The sight, which was produced by at least eight different manufacturers, incorporated a rectangular 'male' mounting plate with bevelled edges which slid into a corresponding 'female' base fixed to the receiver. Once

A fixed-zero telescopic sight for the Type 97 sniping rifle. Note the pivoting locking catch and rubber eye-shield. (© Royal Armouries PR.3215)





inserted, a small catch was rotated through 180 degrees to lock the sight in place and automatically zero it to the factory setting. Sights were numbered to the rifle and could not be interchanged. A small rubber eye-shield was fitted to block outside light and to guard the firer from recoil. Each telescopic sight was originally provided with a distinctive leather case with both waist and shoulder carrying straps. The leather of the case was later changed to rubberized canvas.

In the absence of any means to adjust it, the sight's graticule was marked with range settings and windage corrections. The soldier to whom a Type 97 sniping rifle was issued was expected to learn the vagaries of his particular rifle by trial-and-error firing. This immediately placed the Japanese at a disadvantage as any new soldier coming to a sniping rifle for the first time would have to spend additional time learning about its individual peculiarities and would not be immediately effective with it. The Type 97 sniping rifle was produced at both the Kokura and Nagoya arsenals. Based upon the serial-number evidence, production seems to have totalled about 21,000 units (Honeycutt & Anthony 1996: 78–82).

In 1941, Colonel Tatsumi was again called on to develop a new sniping rifle, this time using the recently adopted Type 99 rifle as the basis. Proving-ground trials showed that there was only a difference of 1–2 per cent improvement in accuracy between the 'long' and the 'short' rifles.

A very rare picture of a Japanese sniper during the Pacific campaign of 1944. He is armed with a Type 97 sniping rifle with a 4x externally adjustable telescopic sight mounted to the left of the bore axis to enable continued use of charger loading. The rifle's bolt handle is bent downwards. The sniper has removed the sheet-steel bolt cover in an attempt to reduce the chances of his firing position being given away by the cover's rattle when the bolt was worked. (AirSeaLand Photos)

Consequently, the 'short' rifle was chosen. Initially, the 2.5× scope of the Type 97 sniping rifle was used, but this was later standardized for a 4× version with a 7-degree field of view. Eventually, a slightly different scope was used with a mount that had adjustable rings; this allowed the soldier to zero his own scope, which was not only tactically desirable but also freed up arsenal time for more productive uses. Although some Type 99 rifles have been observed with the 2.5× fixed telescopic sight, it was clear that the larger 4× fixed sight was envisaged to try to maximize the superior range and penetrative ballistics of the 7.7mm cartridge. The introduction of the 4× externally adjustable telescopic sight was undoubtedly a further attempt to increase the effective range of the Type 99 sniping rifle. The fact that arsenal personnel did not have to use valuable time on the mundane task of zeroing the rifle to its specific sight meant that they could be more fruitfully employed on more important work. Also, this externally adjustable telescopic sight allowed the individual soldier to 'fine-tune' his own rifle, which in turn gave him the confidence to engage targets at longer ranges while freeing him from the need to send his rifle back to ordnance personnel if it ever lost its zero. Independence from central supply and logistics in the field was a central tenet of the individual Japanese soldier's existence.

While Japanese sniping rifles were unsophisticated by European standards, their imaginative tactical use meant that this lack of sophistication did not negate their effectiveness.

Japanese snipers on Guam (opposite)

Two Japanese snipers during the final days of the fight on Guam, in July 1944. They have been left behind in order to slow up the American advance and are in the process of moving into position. The man in the foreground, armed with a Type 99 rifle, has taken up his position and covers the approach of his Type 97-armed comrade to him. The sniper wears extensive camouflage to conceal his position, thus ensuring that the enemy will be in very close range before he fires. As the standing man has not taken up his final firing position, he wears no camouflage. When firmly in position, he will camouflage himself using local foliage. Both men are very ragged and dirty with minimal field equipment which comprises front and back ammunition pouches, Type 30 bayonets, water bottles and haversacks.

The standing man wears the field cap with havelock-type neck-guard made from four cloth strips. The comrade covering his approach wears the M1932 helmet with leaves acting as camouflage in its net. Both men have covered the foreends of their rifles with scrim or sackcloth to camouflage them by reducing any reflections and breaking up the rifle's general outline.

The rifles are the 6.5mm Type 97 (no more than the Type 38 with a scope fitted to it) and the more modern 7.7mm Type 99. The distinctive cases for their telescopes are made of rubberized canvas and are slung around the men's bodies. The sheet-steel dust covers for both rifles have long been discarded to avoid compromising the sniper's location by their rattling noise. The bolt handles of both rifles are turned down to reduce snagging.

The telescopes of both rifles are mounted on the left-hand side of the breech. The Type 97 rifle is fitted with a 2.5× non-adjustable telescopic sight while the Type 99 has a 4× externally adjustable sight.





The Type 2 paratroop rifle assembled. (USNPS Photo, Springfield Armory National Historic Site, SPAR 4247)

Specialist rifles for parachute infantry

Parachute-infantry units were established by the Japanese in both the IJA and the IJN during the late 1930s. By late 1941, their combined total exceeded 18,000 men. Development of special paratrooper rifles to arm the men of the parachute-infantry units was undertaken by the 1st Section of the 1st Army Technical Research Institute. One solution – designated the Type 100 – was a Type 99 short rifle with an interrupted thread between the barrel and the receiver. This rifle was designed to be carried in leg bags by the airborne soldier. Another solution was to take a Type 38 carbine, saw off the buttstock and fit a substantial hinge and locking latch. Designated the Test Type 1 rifle, this modification enabled the carbine to be carried with its butt folded. This rifle could easily be deployed ready for action on the drop zone. Roughly 500 of each type were produced.

By October 1942, the 1st Section had developed a practicable take-down rifle. This was based on the Type 100 rifle, but with a tapered wedge barrel lock that could be tightened with the fingers by means of a folding wire ring. Tests at the Futsu Proving Ground found the design to be satisfactory. A folding bayonet and detachable bolt handle were both evaluated, but ultimately rejected. In May 1943, the Type 2 paratroop rifle was officially adopted. Roughly 19,000 were produced. The Type 2 sometimes used the knife-bayonet of the Type 100 submachine gun. This knife-bayonet looked like the Type 30 bayonet, but had no quillon and a blade only 20cm long.

The Type 2 paratroop rifle divided into its two sections. (USNPS Photo, Springfield Armory National Historic Site, SPAR 4247)





ARISAKAS IN OTHER HANDS 1914–45

The Arisaka was exerting some international influence even before 1914, with the British Pattern 1907 and Pattern 1913 bayonets being modelled on the Type 30 bayonet, as was the US Model 1917. The British used the Type 30 bayonet during the early years of World War I; latterly these bayonets were sold by Britain to Russia. It was the outbreak of war in 1914, however, that would lead to the influx of Arisaka rifles into Europe on a large scale.

The proposition that an East Asian country should supply large numbers of rifles to a country engaged in a war in Europe might sound implausible. It must be remembered, however, that Japan had been Britain's ally since 1902 and in August 1914, Britain had asked for Japanese naval assistance to deal with German commerce raiders in Chinese waters. Consequently, it is entirely logical that Britain should have procured Arisaka rifles from Japan until British production facilities could satisfy demand for the Short Magazine Lee-Enfield (SMLE) rifle.

The Secretary of State for War, Herbert Kitchener, foresaw that the conflict would not be over by Christmas 1914 as was popularly supposed, but that a further six Army divisions were needed immediately. The 'Britain Needs You' campaign that he waged was so successful that recruits were joining at a rate of 33,000 per day. By the end of 1914, 1,900,000 men had enlisted. Arms and equipment were in short supply, however, and many different types of rifles were acquired for use during basic training. The rationale behind this was that if a man could be taught to shoot with and maintain any rifle then that basic knowledge could be applied to the British service SMLE rifle in due course as this weapon became available.

The Official History of the Ministry of Munitions notes that 50,000 Lee-Enfield rifles were obtained from India alongside a consignment of 130,000 Japanese rifles (Edwards 2004: 1). Initially offered to the French, 50,000 of the Japanese rifles and 40 million cartridges were in British hands by November 1914. Rather than complicate the supply of ammunition and spares by issuing them to Army units already in combat, it was decided that they should go to the Royal Navy because its need for small arms was far less pressing. The First Sea Lord, Winston Churchill, in a memorandum dated 25 November 1914, ordered that the 50,000 Japanese rifled be distributed one for every marine and one for every five

sailors, with the latter ratio reduced to one rifle for every three sailors serving aboard ships on foreign service. The remaining rifles would be distributed among auxiliaries and trawlers. Thus the Royal Navy would be re-armed with Japanese rifles, releasing precious .303 rifles for field service with Army units (Edwards 2004: 4).

The Japanese rifles were supplied by a private company, Taihei Kimiai, which acted as an arms broker for the Japanese government. The company was still active up to World War II, but it and its records were destroyed during the war.

As with all British military stores, an entry was made in the List of Changes Paragraph 17213 dated 24 February 1915. The Arisaka was described as 'Rifle, magazine, .256 inch with cleaning rod'. The Type 30 was erroneously described as 'Pattern 1900' and the Type 38 rifles and carbines as 'Pattern 1907'. The LOC also included a sword-bayonet and scabbard as well as the following 'appurtenances': a jag, an implement (screwdriver), an oil bottle, a brass front-sight protector/muzzle cover, a breech cleaner and a magazine-platform depressor. Initially, the Arisaka was only approved for land service, but Paragraph 17370 of 15 June 1915 extended it to common service, i.e. naval as well.

Evidence exists that a small number of Type 44s were supplied to Britain during World War I, one example of which is known with typical British unit markings for the Royal North Devon Yeomanry.

The Arisakas received by Britain were not inspected by the British Ordnance on receipt. The Imperial chrysanthemum *mon* was cancelled by being over-stamped with the logo of the inspecting arsenal, namely the intertwined cannon-ball mark of the Tokyo Artillery Arsenal. In addition, it was commonplace during the early years of World War I for British units to stamp their own property marks on weapons and equipment. Type 30 rifles in British service are known to have been marked by the 2nd Dragoons (Royal Scots Greys) and The Northumberland Fusiliers. Type 38 rifles bear the marks of The Essex Regiment, The East Lancashire Regiment, The Manchester Regiment and the Royal Marines. Type 38 carbines are marked to the Sussex, Worcestershire and Wiltshire Yeomanry and to the Pembroke Depot. Generally, the Arisakas were well received, although some found them long and cumbersome by comparison with the SMLE.

Some Arisakas were issued to Colonel T.E. Lawrence and were used by his forces during the Arab Revolt against the Turks. Lawrence mentions them in the *Seven Pillars of Wisdom* in the context of the beginnings of the Arab Revolt in June 1916, led by the Emir Faisal. The rifles had not been well maintained after being withdrawn from British service and Lawrence was unimpressed by their condition, noting that they were either broken or their barrels were so heavily fouled that they burst when the rifles were first fired by the Arab fighters (Lawrence 1974: 95).

Standard Japanese rifle equipment was issued with the Arisakas; in British military parlance this was designated 'J' Pattern Equipment. The magazine floorplate depressor device originally intended for the Pattern 1914 rifle was modified and issued with the Arisaka.

Britain was not the only member of the Allies that was short of rifles. Disastrous defeats for the Russians early in 1915 had left them chronically



short of small arms; and because Russia had already obtained large numbers of Arisakas, the British decided to send their supply to Russia as and when the Japanese rifles were replaced in British service. The first shipments started late in 1915. Early in 1916 it was reported that 60,000 Arisakas and 18 million cartridges had been sent. British consignments continued to be shipped to Russia until just before the October Revolution of November 1917. The Royal Navy gave up its Arisaka rifles, replacing them with .303 Ross rifles in what would seem to have been a retrograde step as the Arisaka was much more reliable than the complicated Ross. However, the Canadian rifle's inherent unreliability in the trenches would not be an issue for shipboard use.

On 25 October 1921, the List of Changes recorded that all .256 equipment was considered to be obsolete in the British service (Para 24634). That was the end of the matter until 1925, when the Director of Intelligence at the War Office reported that the Japanese Chargé d'Affaires had expressed his concern that a large number of Russian and Japanese rifles had reached the Chinese warlord Tso-lin. He believed that there were 35,000 P1907 (Type 38), 30,000 Old Pattern (Type 30) and 15 million cartridges in Tso-lin's hands. The Secretary of the Surplus Stores and Liquidation Department was asked to confirm that this materiel had not come from Britain. He did so, stating that 17,418 Japanese rifles were still in store at Fort Belvedere. Eventually these rifles were sold to Horace Soley and Co. of 3 Jewry Street, London. In turn, Soley exported them to Sweden with Finland as their ultimate destination.

ABOVE LEFT

A ragged looking group of Russian soldiers present arms with their Type 38 Arisaka rifles with Type 30 bayonets fixed. They wear the *furazhka* peaked forage caps and carry their greatcoats *en banderole* with the ends tucked into their circular-section mess tins. The soldier on the left has a cloth bandolier for extra rifle ammunition. (Nik Cornish at www.stavka.org.uk)

ABOVE RIGHT

A contemplative Russian soldier sits on the plinth of a statue with his Type 38 Arisaka carbine. The absence of the Tsarist cockade on his cap probably marks him out as a Revolutionary. He wears an ammunition pouch slung across his shoulders in the style often adopted by sailors. He has two Model 1915 hand grenades hanging from his belt. (Courtesy of the Central Museum of the Armed Forces, Moscow via Stavka)



A Type 38 carbine built for export to Mexico. Its sling-swivels are mounted on the side of the stock for comfort when mounted.
(© Royal Armouries PR.6354)

The first 6.5mm Arisaka cartridges to enter British service were of Japanese manufacture. Some 20 million were procured. Contract 027/649 of 15 March 1915 provided that the Japanese government would supply components only (no propellant) for 16 million rounds at a rate of 4 million per month. The King's Norton Metal Company in Birmingham obtained the contract to load them. Oddly, the .256in Arisaka cartridge was not officially adopted for British service until 25 September 1917 (LOC Para 19475), long after the Arisaka rifles had been shipped from Britain to Russia.

Initially, the British-manufactured cartridge was loaded with the 139-grain (9.01g) spitzer bullet and designated as 'Cartridge SA Ball .256 Mark I Ball' (its design was governed by RL 22657). The propellant was granulated MDT cordite and the bullet was secured into the case neck by three small punch marks. It is believed that Mk I cases were not head-stamped. When Russia started to request large quantities of 6.5mm cartridges, a decision was taken to load the older Type 30 cartridge with the round-nosed bullet. Why this was so is unclear. The best explanation is that the Russians specifically requested this cartridge, which strongly suggests that the majority of the rifles they had initially acquired were Type 30s. This cartridge was duly designated as 'Cartridge SA Ball .256 Mark II Ball' and noted in the LOC, Para 19475. The round-nosed bullet was cupro-nickel jacketed and weighed 160 grains (10.37g). G. Kynoch & Co. also produced an armour-piercing bullet for the Arisaka cartridge, but it is not clear which targets this type of ammunition was intended to defeat.

A drill cartridge was made using a brass case drilled with four small holes and no cap in the cap chamber. The round-nosed bullet was secured in the case neck with a heavy crimp. The London gunmakers J. Blanch & Sons contracted with the British government early in 1915 to supply 500,000 rolled-tinplate dummy cartridges along the lines of their .303 ammunition. For avoidance of doubt the tinplate Arisaka dummy cartridge was known as the 'J Pattern'.

British cartridge production was split between Kynoch in Birmingham and the Royal Laboratory in Woolwich, London. From February 1916 to



September 1917, 558,947,000 cartridges were produced, with about 60 per cent being made by Kynoch. The Kynoch cartridges are distinctive in that they have a headstamp which includes the letter 'K' and the larger-domed primer as used in contemporary British .303 ammunition. The Royal Laboratory cartridges have no headstamps and small flat primer caps. The British 6.5mm cartridges were put up in five-round chargers, three chargers to a cardboard or leatherboard wedge-shaped packet. The chargers were either brass or sheet steel and were manufactured by a variety of companies. Most were Mk I; only Hinks, Wells & Co. of Birmingham loaded the Mk II as that firm held a patent protecting the thin steel platform which covered the spring. Six hundred cartridges could be packed into one wooden box with tin liners. As nearly all 6.5mm ammunition was shipped to Russia, original specimens are rarely encountered today.

As has previously been noted, Russia acquired large quantities of Arisaka rifles during World War I – as many as 600,000 – not only to equip new recruits to its ever-expanding armies, but also to replace those Mosin-Nagant rifles lost in a series of disastrous defeats during the early months of World War I. By extension, these Arisaka rifles armed both sides in the Russian Civil War (1917–22) that followed immediately after the October Revolution. As many of these rifles were stored in depots in Finland, they immediately became available to Finnish Nationalist rebels. The Finns tended to modify the magazine floorplate release catches as these could easily be accidentally activated by thickly gloved hands.

Because the Finnish state had acquired large numbers of Russian M1891 Mosin-Nagant rifles – whether by capture or purchase – it was inevitable that the Finns would adopt the M1891 as their service rifle. Consequently, such Arisaka rifles as remained in the Finnish military inventory were transferred to the merchant marine or to the Estonian Defence League. An original packet of Finnish insurgent ammunition appeared in a specialist ammunition auction in Birmingham during 1990. It contained 15 cartridges (not in chargers) repacked in a white cardboard packet with a typed label describing the contents in Finnish.



A Fedorov Avtomat Model 1916 rifle. (© Royal Armouries PR.13189)

An interesting spin-off from the use of the Arisaka in Russia was that the noted small-arms designer Captain Vladimir Fedorov chambered some of his early rifles for a 6.5mm rimless cartridge of his own design. He did this because the 7.62mm M1891 Mosin-Nagant rifle cartridge was not suited to self-loading rifles because of its tapered bottle-necked case. It was also far too powerful. The outbreak of war in 1914 put an end to Fedorov's developmental work. Nevertheless, the Russian government ordered 25,000 of his self-loading rifles. Wartime production exigencies forced Fedorov to re-chamber his design for the 6.5mm Type 30 Arisaka cartridge, which was already being imported into Russia in huge quantities for the Arisaka rifles which the Tsar's forces had adopted as emergency weapons. The Fedorov Avtomat Model 1916 rifle was re-chambered by means of a specially designed insert for the Arisaka cartridge. With its reduced ballistic performance and rimless case, it proved an ideal cartridge and some 5,000 examples of Fedorov's design were built during World War I.

The Fedorov Avtomat has a strong claim to being the world's first assault rifle. It was selective fire, had a 25-round magazine and used a cartridge that was less powerful than the standard service rifle round. Vladimir Fedorov was already going down the path of a 6.5mm cartridge when the wide availability of the Arisaka cartridge allowed his design to achieve limited production status. It is ironic that the 6.5mm Arisaka cartridge played such an important part in the development of early automatic small arms; it was the cartridge's inferior ballistics and ready availability, however, that made it so suitable.

Part of the Russian purchase of Arisaka rifles comprised 35,000 Type 38s originally made for the Republic of Mexico and chambered for the 7×57mm Mauser cartridge. These rifles were not delivered to Mexico, however, due to the Mexican Revolution (aka the Mexican Civil War) of 1911–20. The rifles in question were identical to Japanese service rifles except that the receiver ring had the Mexican crest and the words 'REPUBLICA MEXICANA'. Also, the rear sight was slightly different due to the different ballistics of the 7mm cartridge.

The Austro-Hungarian Empire issued Arisaka rifles and ammunition captured from the Russians to second-line troops during World War I. Many of these rifles were subsequently converted to the 6.5mm Greek Mannlicher-Schoenauer cartridge which was in military use in Austria-Hungary during World War I.

Between 1929 and 1934, the Estonian Defence League had 24,000 Type 38 rifles (provided by the Finns) re-barrelled and re-chambered for the British .303 cartridge. These .303 rifles were designated KL18.

Japan supplied many Type 38 rifles to the army of its puppet state of Manchukuo during the 1930s. In any case, Type 38 rifles – whether supplied by Japan or captured – were routinely carried by soldiers on all sides during the various conflicts in China.

The last recorded large shipment of Arisaka rifles to a foreign power was in 1936 to Republican Spain, sent from the Soviet Union on the MV *Campeche*. This was not a case of one left-wing government aiding another out of altruism; all Soviet aid was paid for by the Spanish gold reserves. Doubtless, the Soviets saw the opportunity of ridding themselves of thousands of obsolete rifles in return for some highly desirable gold bullion.

ARISAKA RIFLES AFTER 1945

Japan's post-war constitution included the so-called 'peace clause' at Article 9, which in renouncing war also forbade Japan from maintaining any armed forces. As a consequence of this, huge numbers of Arisaka rifles were destroyed, this action undoubtedly contributing to their scarcity today. Some were retained by the Allies, however, principally to assist the Japanese in resisting Soviet aggression, as the Soviet Union sought to increase its territories by occupying those formerly under Japanese control. These weapons were intended for use by the Japanese National Police, which was really a paramilitary organization armed with military-grade weapons.

Japanese soldiers in Manchuria during 1945 lay down their arms under the watchful eye of a Soviet soldier who is compiling an inventory of the surrendered weapons, which are Type 38 and Type 99 rifles and three Type 11 light machine guns. The Japanese soldiers wear only a single frontal ammunition pouch, suggesting that they are POW camp guards who did not need to carry a full combat load of ammunition. (AirSeaLand Photos)



Japanese soldiers in Korea during 1945 surrender their Type 99 rifles to an American GI. The side-mounted sling-swivels of the Type 99 are readily apparent on the rifle of the soldier in the foreground. The Japanese soldiers wear the full rifle equipment of front and rear pouches together with Type 30 bayonets. Surrendering his personal weapon was regarded as a supremely shameful act by the Japanese soldier, who believed he had failed his Emperor by yielding his property to the enemy. (AirSeaLand Photos)



After World War II, the Royal Thai Arsenal in Bangkok used Type 38 parts to make a carbine for the Royal Thai Police. The stock and barrel were cut down and the stock had a rounded slot (like that of a US M1 Carbine) machined in the butt. Some bolt handles were turned down and some were not. Some carbines had the Royal Thai Police symbol stamped on the receiver with '91' (๙๑) stamped above it, while some were marked with the Siamese *chakra* stamped on the receiver. These carbines were used with M1 Carbine slings and oil bottles.

Arisaka rifles were used by both sides during the Korean War (1950–53). The Americans found that semi-automatic rifles were too complicated and too long in the butt for Korean soldiers to use. Consequently, the US Ordnance converted 133,000 Type 99 rifles – both Long and Short – to chamber the US .30-06 cartridge. This was done by reaming out the chamber, lengthening the magazine box and notching the receiver ring to accept the longer cartridge. The Imperial chrysanthemum *mon* was ground off the receiver. After proof and inspections, these rifles were marked with hand stamps 'US CAL .30' on the left side of the receiver. Those converted rifles taken by GIs as souvenirs had to have the US markings ground off by order of the US Ordnance.

The Militia of the People's Republic of China also used Arisaka rifles. Many were issued unaltered, but a small number are known to have been fitted with SKS carbine barrels to enable them to use the

OPPOSITE

A US Marine poses with trophies of war taken from the Japanese forces on Guadalcanal. Pride of place is given to a very war-worn Type 99 rifle which has been posed on its monopod. The rifle has an improvised bound cloth or tape repair around the stock at the front of the forend. The flag with the zigzag markings apparently denotes a unit's 'on duty' status. (AirSeaLand Photos)





Chinese People's Liberation Army soldiers armed with captured Type 38 rifles and Type 30 bayonets pose defiantly on the hulls of captured Type 97 *Chi-Ha* tanks during the Chinese Civil War of 1927–50. (AirSeaLand Photos)

7.62×39mm cartridge. The Chinese Nationalist Army also modified both Type 38 and Type 99 rifles to use the 7.92×57mm cartridge, which was commonly used in China due to the large number of Mauser rifles imported there.

One of the largest groups of Arisaka survivors is made up of those rifles and carbines brought back as trophies of war by returning Allied servicemen, predominantly US military personnel. Given that many such veterans have now died, a steady trickle of such weapons has been released onto the collector market. Amazingly, articles appeared in American gun magazines during the 1950s and 1960s that showed the reader how to 'sporterize' Arisakas (see *American Rifleman*, August 1954). Why anyone would wish to do such a thing remains a mystery – the partial destruction of an important historical artefact in order to produce an indifferent sporting rifle seems to be nothing less than an act of vandalism.

Indonesian forces used a large number of Type 99 rifles when fighting against the Dutch during the Indonesian National Revolution (1945–49); and it was in Indonesia that perhaps the most surreal post-war use of Arisaka rifles occurred during 1945–46. In order to alleviate military manpower shortages in Indonesia, the British initiated the Japanese Surrendered Personnel programme which brought former IJA troops under the command of Admiral Lord Louis Mountbatten. Some 35,000 fully armed Japanese soldiers, in their wartime IJA units, fought under British command. Lieutenant-General Sir Philip Christison even went so far as to recommend a former IJA major named Kido for the Distinguished Service Order.

SHOOTING THE ARISAKA

Before firing any firearm for the first time, a rod with a flannelette patch soaked in bore solvent should be pushed up its barrel. This will remove any preservative oil, and is also a useful check to ensure that there is no grease or other debris in the barrel. Firing a bullet into a barrel full of preservative is very dangerous and may cause excessive pressures.

If the bore is badly fouled or rusted, it may be necessary to scrub it clean with a phosphor-bronze brush. (This will be less likely with the Type 99, which has a corrosion-resistant chromed bore.) Once the fouling has been loosened, a series of patches should be used to remove it until a patch emerges clean. Any superficial rust can be removed with a small pad of Grade 000 extra-fine steel wool soaked in light mineral oil. Change the steel wool often as rust is very hard and will act as an abrasive and scratch the metal. Stubborn patches of rust on the rifle's metalwork may need to be chipped off using the edge of a copper or nickel coin. This will remove rust without scratching the underlying metal or removing finish.

Inspect the stock carefully for any cracks or splits. Make sure all screws are properly tightened. Strip the bolt to its component parts. Pay particular attention to the tip of the firing pin, ensuring that it is rounded and does not have a sharp point that might puncture a primer, causing gas loss to the rear. Clean the bolt face and the inner recesses of the receiver with a toothpick or cocktail stick, ensuring that there is no debris in the gas-escape hole(s). Examine the bolt body and receiver for any cracks or chips to the lugs.

If you live in a jurisdiction that has gun-barrel proof laws, you may want to submit your rifle to the official proof test to ensure that it is safe to use. In a jurisdiction without any proof law, such as the United States, get the rifle looked over by a professional gunsmith.

It is always a good idea to use factory ammunition for the first firing. Not only are you using a cartridge that has been tested to SAAMI or CIP safety standards, but this practice always yields fire-formed brass of exactly your rifle's chamber dimensions if you decide to reload.

Fill a charger with five cartridges and push it into the guides at the rear of the receiver. Put your thumb on the top cartridge and press down smoothly. This should strip the cartridges into the magazine. Pick the charger out of the guide with thumb and forefinger. Pushing the bolt home will chamber the first cartridge. A charged magazine may be emptied by pushing on the magazine floorplate release catch. The floorplate will hinge forwards and the cartridges will drop out.

Some lateral adjustment of the front sight is possible using a small drift and hammer. Remember to move the sight in the direction of the error to centre the point of impact.

If difficulty is experienced obtaining factory ammunition, both calibres of Arisaka cartridge can be reloaded. There is extensive load data in ammunition books, powder manufacturers' material and on the internet. As a general principle, reduce any load by at least 10 per cent and work it back up by increments to the stated maximum. Always examine the primer of any fired case carefully as it will always disclose evidence of excessive pressure by a degree of flattening. If difficulty is

This sequence of four photographs shows the sequence for loading an Arisaka rifle's magazine from a charger. First, a charger of five 7.7mm cartridges is pushed into the charger guide notches of a Type 99 rifle. (Chantel Taylor)



experienced in opening the bolt after firing a home-load, it is definitely generating excess pressure and that batch of cartridges should be dismantled. The Arisaka rifle may have a strong action, but it never pays to take this for granted.

The reason for this strength is simple: in the Arisaka Type 38 and Type 99 actions, the whole of the cartridge head is supported by the bolt. The noted ballistician General Julian Hatcher observed that because the supporting metal of the Type 99 rifle's chamber comes to the forward edge of the extractor groove, none of the cartridge case is left hanging in the air, as is the case with the Enfield and Springfield rifles (Hatcher 1962: 206). Hatcher also attributes much of the strength of the Type 38 to the fact that its semi-rimmed cartridge has a relatively strong head as a result of the slight extractor groove. Combined with the fact that the walls of the cartridge are strong near the head, it is more difficult to wreck the Type 38 rifle's action than those of rifles which use rimless cartridges with weaker heads (Hatcher 1962: 206).



Second, pressure is applied to the uppermost cartridge to push the others out of the bottom of the charger and into the magazine. (Chantel Taylor)



Third, further downward pressure is applied until all of the cartridges are in the magazine. (Chantel Taylor)

Nonte (1961) provides useful instructions on how to make both 6.5mm and 7.7mm cases from readily available .30-06 brass. The 6.5mm bullet uses 6.68mm-diameter cases and the 7.7mm bullet uses 7.87mm-diameter cases.

As the Arisaka's safety mechanism is not familiar to Western users, plenty of practice with an unloaded rifle is needed to master it. Always be sure that you can apply the safety quickly and easily before any live-firing session. Unsurprisingly, someone fumbling with the mechanism of his rifle makes other range users nervous. Hatcher tested the Arisaka action up to a pressure level of 90,000psi (620.53kPa); as it showed no signs of incipient failure, he stopped his tests at that level.

You will always turn heads on any range if you appear with an Arisaka as few people will have ever seen one, let alone shot one. The low recoil of the 6.5mm cartridge always recommends itself to shooters of small stature. If a firer finds the Type 38 rifle to be too long, a sandbag placed under the forend will remedy this. (This replicates the forked sticks that Japanese soldiers carried to support their Type 38 rifles.)



Fourth, once the magazine is full, working the bolt pushes the charger out of the way and chambers the first round. (Chantel Taylor)



IMPACT

The verdict of history

THE TYPE 38 AND ITS CONTEMPORARIES

Some idea of the effectiveness of the Type 38 Arisaka rifle can be gained by comparing its attributes with those of six contemporary rifles in service in 1905: the M1895 Mannlicher (Austria-Hungary); the Mauser Gewehr 98 (Germany); the Short Magazine Lee-Enfield (Britain); the M1886 Lebel (France); the M1903 Springfield (USA); and the M1891 Mosin-Nagant (Russia).

The first comparison concerns the overall length and weight of the rifle, giving an indication of the weapon's 'handiness'. It should be remembered that in 1905, infantrymen were still believed to need a long rifle with a long

THE TYPE 38 ARISAKA RIFLE IN CONTEXT				
Rifle	Calibre	Length*	Weight**	Power†
Type 38 Arisaka	6.5×50mm	175cm	4.08kg	2,617 joules
M1895 Mannlicher	8×50mmR	152cm	4.04kg	2,752 joules
Gewehr 98	7.92×57mm	177cm††	4.08kg	2,983 joules
SMLE	.303	155cm	4.31kg	2,508 joules‡
M1886 Lebel	8×50mmR	183cm	4.08kg	2,983 joules‡‡
M1891 Mosin-Nagant	7.62×54mmR	178cm	4.08kg	2,617 joules
M1903 Springfield	.30-06	150cm	4.08kg	3,295 joules
* Rounded to the nearest centimetre, with bayonet fixed.				
** Unloaded weight. This varies between individual specimens due to timber density of the stock.				
† Typical kinetic energy at the muzzle.				
†† The M1898 bayonet has a 45.7cm blade; the Gewehr 98 could be used with shorter types.				
‡ With Cordite Mk VI cartridge.				
‡‡ With Balle M bullet.				

bayonet to defend themselves against cavalry. While being a typical weight for a service rifle of the period, the Type 38 with its fixed bayonet was much longer than three of the comparator rifles and in the same length range as the others. This made it unbalanced and not very handy to use, especially given the small stature of the average Japanese serviceman.

Next, magazine capacity and ease of loading are assessed. The M1895 Mannlicher held five cartridges in an en bloc clip, making for rapid loading; its magazine could not be used without the clips, however, and could not be 'topped off' using single rounds. The Gewehr 98 held five cartridges and used a stripper clip (charger), also making for rapid loading. The SMLE held ten cartridges from two chargers; although it was slow to fill, its detachable magazine allowed the SMLE to be topped off using single rounds while keeping the bolt closed and a round in the chamber ready to fire.

The M1886 Lebel had a Kropatschek-type tubular magazine holding eight cartridges with one on the lifter. Very slow to fill, the Lebel could be topped off using single rounds, but the bolt had to be kept open and the rifle was not immediately ready to fire. The M1891 held five cartridges, loaded by a charger; the interrupter meant that the magazine could be topped off using single rounds, but the bolt had to be kept open and the rifle was not immediately ready to fire. The M1903 Springfield carried five cartridges and used a stripper clip, making for rapid loading.

The Type 38 held five cartridges in a stripper clip. In terms of magazine capacity and speed of loading, the Type 38 was as good as any other Mauser-style rifle and vastly superior to the antiquated Lebel.

Next, the power of the cartridge and its potential for future adaptability are assessed. In ballistic terms, 'power' is a somewhat clumsy and inaccurate term to use; but if kinetic energy (measured at the muzzle) is designated as representing power, a comparison can be made. The Type 38 was underpowered by European standards, but this proved advantageous as it entailed reduced muzzle flash and recoil. The 8mm Mannlicher, a bottle-necked cartridge, would prove unsuitable for automatic weapons with large-capacity box magazines. The German 7.92mm cartridge case was straight-walled, making it readily adaptable to use in box magazines and for automatic weapons. The .303, another bottle-necked cartridge, would not at first blush prove readily adaptable to automatic weapons,



A member of the IJN's Special Naval Landing Forces armed with a Type 38 rifle and Type 30 bayonet. His sleeve badge appears to be that of a leading seaman from the Engineering branch, featuring crossed spanners topped by a cherry-blossom motif. (AirSeaLand Photos)

but the excellent Bren light machine gun got round this problem with its curved magazine. The swollen, bottle-necked 8mm Lebel cartridge case was not suitable for automatic weapons, resulting in the dreadful Chauchat machine rifle. The Mosin-Nagant M1891's underpowered cartridge was adapted for light machine guns; its use by Russia in the Fedorov Avtomat M1916 stemmed from wartime expediency rather than design. The .30-06 cartridge has a rimless case whereas the 6.5×50mm Arisaka's case is only semi-rimless. This means that the former is much more adaptable to full-automatic and self-loading firearms because there is no projecting rim to cause misfeeds. That said, the 6.5mm Arisaka cartridge was used in several very successful full-automatic firearms such as the excellent Type 96 light machine gun. The verdict of history shows that the .30-06 cartridge was far more versatile and went on to be the basis of the 7.62×51mm NATO cartridge.

In terms of the ease of manufacture, the SMLE was the easiest rifle in this group to manufacture as it had a split receiver and only a small single locking lug on its bolt. The M1886 Lebel and M1891 Mosin-Nagant came next, as although they had bolts made of several components, these in themselves were easy to make. Both rifles had split receivers. The Mannlicher M1895's straight-pull bolt was complicated to make due to its many components. That, combined with a receiver bridge, made it difficult to make. However, the Mauser Gewehr 98 and the M1903 Springfield both had receiver bridges and one-piece bolt bodies with three locking lugs on them. These required many machining operations to make and were the most difficult to manufacture in the group.

Turning to the strength of the action, any bolt action rifle which has a split receiver and multiple-component bolt body will never be as strong as one which has a receiver bridge and a one-piece bolt body. The latter arrangement confers greater rigidity on the action during firing. Consequently, the SMLE, the M1886 Lebel and the M1891 Mosin-Nagant have the three weakest actions in the group. The Mannlicher M1895 has a receiver bridge, but its complicated, multi-component bolt could never be as strong as one with a one-piece body. The Mannlicher-Carcano M1891 has a split receiver, but a rigid one-piece bolt body with two locking lugs next to the chamber. The Mauser Gewehr 98 and the M1903 Springfield have receiver bridges and one-piece bolt bodies with three locking lugs, making them the strongest in the group.

The Type 38 Arisaka rifle had the best of both worlds, being relatively easy to make with very few components in its bolt and a strong one-piece bolt body with two frontal locking lugs.

THE TYPE 99 AND ITS CONTEMPORARIES

This exercise needs to be repeated with the Type 99. The rifles chosen for the second comparison are: the Mauser Kar 98k (Germany); the Lee-Enfield No. 4 Mk I (Britain); the MAS 36 (France); the M1903A3 Springfield (USA); the Mosin-Nagant M1891/30 (Soviet Union); and the Mannlicher-Carcano M1891/38 (Italy). To ensure like-with-like

comparison, the comparator rifles are all post-1918 modernizations of earlier types, with the exception of the MAS 36.

In terms of magazine capacity and ease of loading, the Kar 98k and MAS 36 both held five cartridges, loaded from a Mauser-type charger. Loading was easy and positive for both rifles; the magazine could be topped up by loading loose cartridges, but neither rifle could be fired while this was being done. The Lee-Enfield No. 4. Mk I held ten cartridges loaded from two chargers; loading was generally easy, but chargers had to be filled carefully to accommodate the tapered cartridges. The magazine could be detached for topping up and the rifle could be fired (once) while this was being done. The M1891/30 held five cartridges, loaded from a charger. Loading was straightforward, but the charger was fragile and had to be filled carefully to accommodate tapered cartridges. The interrupter allowed for topping up with loose cartridges, but the rifle could not be fired while this was taking place. The M1891/38 held six cartridges in a Mannlicher en bloc clip. The rifle was easy to load, but would not function as a repeater without the clip; it could not be topped up with loose cartridges. The M1903A3 held five cartridges, loaded from a Mauser-type charger. Loading was easy and positive. The magazine could be topped up by loading loose cartridges, but the rifle could not be fired while this was being done. In this respect the Type 99 was on a par with other countries' rifles which used a variant of the Mauser Gewehr 98 action.

Turning to the 'power' of the cartridge and its potential for future adaptability, the Kar 98k's excellent 7.92×57mm cartridge was constantly updated in both propellant and bullets. Its straight-sided, rimless case meant it could be readily adopted for automatic weapons, and it was the basis for many other military and sporting cartridges. The British .303 cartridge has been discussed above. The 7.5×54mm round used in the MAS 36 offered adequate ballistics; its straight-sided, rimless case meant it could easily be used in automatic weapons. The Soviet 7.62×54mmR round was another elderly cartridge with bottle-necked case which did not seem to be suitable



Arisaka rifle safety in the 'Fire' position. When set to 'Safe' the notch is in line with the bore axis. (Chantel Taylor)

THE TYPE 99 ARISAKA RIFLE IN CONTEXT				
Rifle	Calibre	Length*	Weight**	Power†
Type 99 Arisaka	7.7×58mm	147cm	3.18kg	3,051 joules
Kar 98k	7.92×57mm	135cm	3.86kg	3,685 joules††
Lee-Enfield No. 4 Mk I	.303	133cm	4.13kg	3,132 joules‡
MAS 36	7.5×54mm	135cm	3.72kg	3,091 joules
Mosin-Nagant M1891/30	7.62×54mmR	166cm	3.99kg	3,661 joules
M1903A3 Springfield	.30-06	135cm	3.95kg	3,055 joules‡‡
Mannlicher-Carcano M1891/38	7.35×51mm	121cm	3.72kg	2,949 joules
* Rounded to the nearest centimetre, with bayonet fixed.				
** Unloaded weight. This varies between individual specimens due to timber density of the stock.				
† All values are typical.				
†† With sS Patrone cartridge.				
‡ With Mk VII Ball cartridge.				
‡‡ With M2 Ball cartridge.				

for modern weapons. This notwithstanding, at more than 120 years old it is the world's most long-lived cartridge, its principal current use being in automatic weapons. The .30-06 M2 Ball used in the M1903A3 was an excellent cartridge; its straight-sided, rimless case was ideal for use in automatic weapons. The M1891/38's 7.35×51mm cartridge's ballistics were barely adequate and led the Italians to revert to the 6.5×52mm cartridge in 1941. In conclusion, while the Japanese 7.7×58mm cartridge offered an acceptable KE level, it was not an exceptional cartridge.

In terms of ease of manufacture, the Kar 98k was complicated to make, with many forgings and machining processes. The Lee-Enfield No. 4 Mk I was simplified to allow for dispersed production of components and centralized assembly; the two-section stock allowed for smaller blanks, thus saving timber. The MAS 36 was easy to make and quite crude in its finish; again, the two-section stock allowed for smaller blanks. The M1891/30 was much easier to make than its predecessor and benefited from more stampings and pressings; it had a crude, agricultural feel but was robust and soldier-proof. Even in its simplified form, the M1903A3 was an over-complicated weapon, more like a precision target rifle than a standard-issue firearm. The M1891/38 was relatively complicated to make – especially its bolt – and still relied on large numbers of machined forgings. The Type 99 used a much-simplified manufacturing process which brought it into line with contemporary European wartime expediency production methods.

The strength of the action should also be considered. The Kar 98k was very strong, especially with its small tertiary locking on the bolt body; the bolt cocked on opening, making it quite slow to manipulate, and the bent handle improved the rate of fire. The Lee-Enfield No. 4 Mk I's action was not particularly strong, but it was more than adequate to cope with the pressures generated by the .303 cartridge. The British rifle's bolt was very quick to cycle as it cocked on closing, making high rates of fire easily attainable. The MAS 36 had a strong action; its bolt handle was ergonomically designed, being bent down and forwards, making it comfortable and fast to use. The M1891/30 had a strong action that was more than capable of handling the powerful 7.62×54mmR M1891 cartridge. The M1903A3 Springfield was immensely strong as it had to cope with the powerful .30-06 cartridge. The M1891/38 did not have a particularly strong action; it did not need to be, as the 7.35×51mm cartridge was not especially powerful in itself. The Type 99 had both a very strong action and an innovative bolt that could be field-stripped for cleaning in seconds without the use of any tools. Indeed, the Type 99's action was stronger than that of many of its contemporaries.

In conclusion, the Type 99 rifle compares very favourably with its contemporaries. Without its bayonet, the Japanese rifle is very handy and easy to carry and use. It is surprising that a shorter bayonet was not issued for use with the new rifle, but Japan's 'cold steel' military culture would not allow such a move. One of the Type 99's best features was the support given to the cartridge by the bolt head, making for a very strong action indeed.



CONCLUSION

The Arisaka rifle variants – the Type 30, the Type 38 and latterly the Type 99 – served Japan for five decades. It is estimated that 6.5 million were built; not a huge total. The Arisaka rifle did not have any special features in its design that made an impact either in military rifle technology or in battlefield tactics. In terms of Arisaka ammunition, neither the 6.5mm nor the 7.7mm cartridge led to any development in ammunition and were not adopted by any other major power. Their survival to this day is down to a small but regular demand from hunters, sport shooters and collectors.

The Type 38 was no more than a Japanese take on the Mauser Gewehr 98; its adoption well after the United States and other Western powers had settled on their choice of rifle was not particularly significant and simply provided an indication that Japan needed to be considered a modern world power which had armed itself accordingly. Beyond Japan, the Arisaka served as a secondary small arm for Britain and Russia whose domestic production could not keep up with the demand for rifles during World War I. It also had a major impact in China in the 1918–39 period. However, perhaps the Arisaka's rifle's greatest impact was during World War II when Japan conquered the majority of the Far East with it. As things transpired, the Arisaka more than proved itself as a reliable and effective rifle with which to arm an infantry-heavy army.

In 1944–45 the Japanese produced reverse-engineered copies of the US M1 Garand semi-automatic rifle as the Type 5. Chambering the 7.7×58mm cartridge, this experimental rifle had a ten-round integral magazine charged with two five-round stripper clips in place of the M1 Garand's eight-round en bloc clip. Intended to join the Arisaka rifles in the front line in 1945, the Type 5 never entered service as World War II ended before it could be produced in large numbers. (© Royal Armouries PR.10293)



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Buttstock of a Type 99 rifle showing its two-piece spliced construction, characteristic of all Arisaka rifles. (Chantel Taylor)



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Dedication

This book is dedicated to all my family and friends for their tolerance and indulgence of my lifetime's passion for firearms.

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Editor's note

Metric measurements are used in this book. For ease of comparison please refer to the following conversion table:

1m = 1.09yd / 3.28ft / 39.37in
1cm = 0.39in
1mm = 0.04in
1kg = 2.20lb
1g = 0.04oz / 15.43 grains
1 joule = 0.74 foot pounds

Front cover, above: A Type 99 Arisaka rifle. (© Royal Armouries PR.638)

Front cover, below: Somewhere in northern China, Japanese soldiers with Type 38 Arisaka rifles and fixed Type 30 bayonets present arms to the rising sun during a New Year parade. (Weltbild/ullstein bild via Getty Images)

Title-page: Japanese troops in full service marching order in Manchuria, 1916–17. Their Type 30 or Type 38 rifles are piled in the foreground in front of some of their packs. One of the rifles in the right-hand pile has both muzzle and breech covers; the company bugler has hung his instrument from it. One of the rifles in the left-hand pile has a pennant attached to its forend. The significance of the pennant's zigzag design on a white background is unknown, but the duty flag of a Japanese warship carried a similar design, albeit a white double zigzag on a red background. (AirSeaLand Photos)

Artist's note

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